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LIQUEFIED NATURAL GAS

HEARING
BEFORE THE
SUBCOMMITTEE ON ENERGY
OF THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
ONE HUNDRED NINTH CONGRESS
FIRST SESSION

RECEIVE TESTIMONY REGARDING THE PROSPECTS FOR LIQUEFIED NATURAL GAS (LNG) IN THE UNITED STATES AND TO DISCUSS THE SAFETY AND SECURITY ISSUES RELATED TO LNG DEVELOPMENT

FEBRUARY 15, 2005



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LIQUEFIED NATURAL GAS

TUESDAY, FEBRUARY 15, 2005

U.S. SENATE,
SUBCOMMITTEE ON ENERGY,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:32 p.m., in room SD-366, Dirksen Senate Office Building, Hon. Lamar Alexander presiding.

OPENING STATEMENT OF HON. LAMAR ALEXANDER, U.S. SENATOR FROM TENNESSEE

Senator ALEXANDER. The Energy Subcommittee of the Energy and Natural Resources Committee will come to order.

I am going to make a brief opening statement, trying to set a good example for brevity, as Chairman Domenici usually does, invite Senator Reed to make his statement and introduce the mayor, invite Senator Feinstein to make her introduction of Mike Peevey, invite Chairman Domenici to say whatever he has to say, and then Senator Dorgan, and then we will have the testimony from the various witnesses.

Let me begin it this way. Our subject today is liquefied natural gas. We call it LNG. For those who are watching or may not be familiar with it, this basically is natural gas that might be in Russia or some other country in the world that is cooled, put in a tanker, transported to the United States, put in a big terminal—we have four of those in the United States—and then introduced into our pipelines and our energy system to heat our homes, operate our businesses, make fertilizer, create electric power, all the other things we do with natural gas.

The reason it is the subject for discussion is because the price of natural gas in the United States has become the highest in the world, at least for any industrialized country. So for many industries, for example, the chemical industry which has 1 million manufacturing jobs, if that should persist for too long, the possibility might exist they would have to move those jobs overseas to a country where the price of natural gas is closer to the world market. Or to the farmers who use fertilizer, so much of which uses natural gas, those are increased costs, or for people who use gas in their residences, suddenly they find their home heating bills or cooling bills a lot higher. So as U.S. Senators, we are concerned about the price of natural gas.

We had a long roundtable here the other day that was, in a way, unusual. Senators did not do most of the talking. We did most of

the listening. It went on for about 4 hours. It was on the subject of gas. Senator Domenici and Senator Bingaman were very active in that, and we heard from a lot of people. This is a follow-up to that. And our goal is to see whether there are provisions that the subcommittee might work on that could be suggested to the full committee to be part of an energy bill.

There are a great many ways to deal with lowering the price of natural gas. We heard many of those the other day. One was conservation. That is very important. One was alternative fuels, for example, the more nuclear power we have, if we can create clean coal. Senator Dorgan talked about coal gasification in North Dakota. Because that is available, that would lower the price of natural gas. We talked about the pipeline that the Senate approved from Alaska. We talked about new ways to supply natural gas from the reserves we have in the United States.

But today's hearing is about LNG. And the two panels will discuss these subjects. The first one is about siting terminals. While we only have four terminals today, one of them is being considered for expansion. I believe there are 31 active proposals as of December 1, 2004 for new terminals in the United States. So siting will be the first panel and the second panel will be safety.

As far as the schedule goes, we have a vote at 4 o'clock in the Senate, and we will try to work around that. But I will try to allocate about an hour for the first panel, not more than that, and then we will go to the second panel and we will work in and out of the vote. Hopefully, we will not have to adjourn during that time. We will finish by about 4:30 or 4:40 at the latest.

Now, Senator Reed, let me welcome you to the hearing. If you could introduce the mayor, then we will have other introductions. I know Senator Feinstein has an introduction. Then I will go to Senator Domenici, if he is here, and Senator Dorgan for statements.

Senator Reed.

[The prepared statement of Senator Alexander follows:]

PREPARED STATEMENT OF HON. LAMAR ALEXANDER, U.S. SENATOR FROM TENNESSEE

Our failure to produce an adequate supply of affordable, clean energy not only pollutes the air, it is shipping thousands of good jobs overseas. In the last four years, we have gone from the lowest gas prices in the industrialized world to the highest gas prices in the industrialized world. None of the potential solutions to this problem are easy and none of the answers are particularly fast. Clearly, in the short-term, the role of aggressive conservation can not be overemphasized. But we can't conserve our way out of this problem. One of the only immediate solutions is more liquefied natural gas (LNG)—and quickly. There are four LNG facilities existing in the United States and 31 more have been proposed. Some of the existing LNG facilities would like to see expansion. It appears that most of these projects, which are our best short-term supply solution, have considerable controversy around them, especially at a local and state level.

Chairman Domenici has asked the Senate Energy Subcommittee to be very active in the natural gas issues as the energy bill develops this Congress. I am working on legislation to be considered in the energy bill, which I intend to introduce in the next several weeks. This is our first of several subcommittee hearings on natural gas issues.

"The Future of Liquefied Natural Gas: Siting and Safety" is our topic today. Panel one will focus on the prospects for LNG development in the United States. Panel two will discuss the safety and security related to LNG development.

Clearly, LNG is needed and especially in the short-term. As with all energy facility developments, there are challenges in the siting of LNG projects. As a former

governor, I'm very interested in making sure that state and local concerns are adequately addressed in these projects.

It doesn't appear that all is going well for the siting of these critically-needed LNG terminals. Today's hearing promises to be a lively hearing as we dive into this very important issue. As of December 1, 2004, there were 31 active proposals (in various stages of the approval process) for new terminals in the United States. The Gulf Coast has been the most receptive region to new siting; on the East and West Coast, local response has not been as positive. Two examples from the West and East Coast will be presented at the hearing today. On panel one, Sound Energy Solutions (a subsidiary of the Mitsubishi Corporation) has proposed a LNG terminal in Long Beach, California. As a result of that proposal, a jurisdictional battle over siting authority between the Federal Energy Regulatory Commission (FERC) and the California Public Utilities Commission (PUC) is now pending before the 9th Circuit Court of Appeals.

This court decision could have widespread impacts on the development of LNG terminals across the country.

I'm pleased that we will hear from the president of the California PUC, FERC and Sound Energy Solutions today on this important issue.

On the East Coast, KeySpan LNG and BG LNG plan to upgrade an existing KeySpan LNG facility at the mouth of Providence Harbor. The application is currently pending before FERC. There has been local concern about the plan. Mayor David Cicilline of Providence will be a witness on panel one. I'm pleased that Sen. Jack Reed of Rhode Island will introduce Mayor Cicilline.

We will also hear from Rick Grant, President and CEO of Distrigas. He will tell us about the Everett LNG facility located in Boston Harbor.

On panel two, we will discuss safety concerns surrounding LNG terminals. I am pleased that Mike Hightower, the lead author of the December 2004 Sandia National Laboratories' LNG Risk Assessment Report, is here with us. In addition, on panel two, we will hear from: Captain David Scott, Chief of the Office of Operating and Environmental Standards at the U.S. Coast Guard. I hope that Captain Scott can tell us more about offshore LNG terminals. There has never been an offshore LNG terminal built to date, but I am very interested in discussing this. Also on panel two, we will hear from Bill Kramer, Deputy Director of the New Jersey Division of Fire Safety and again from Mark Robinson, Director of the Office of Energy Projects at the FERC.

I welcome everyone, and I look forward to hearing your comments on this very important topic.

STATEMENT OF HON. JACK REED, U.S. SENATOR FROM RHODE ISLAND

Senator REED. Thank you very much, Mr. Chairman, members of the committee, Senator Dorgan. Thank you for holding this very important hearing on safety and security issues regarding LNG development.

It is my pleasure today to welcome Mayor David Cicilline of the city of Providence to testify before the subcommittee. He brings a unique perspective on the issues that the committee is considering today. David is a graduate of Brown University and the Georgetown Law School, and he is an extraordinarily effective representative of the people of Providence.

This issue has taken on critical importance for the mayor, for myself, for our Attorney General, Patrick Lynch, and for all the people of Rhode Island because as we speak, the Federal Energy Regulatory Commission is considering proposals to establish LNG receiving terminals in Providence, Rhode Island and Fall River, Massachusetts. Both of these projects would place LNG terminals in urban communities and require LNG tankers to pass by 11 Rhode Island towns and cities and more than 25 miles of densely populated coastline, literally all the way up Narragansett Bay.

In my written testimony, I have outlined my major concerns with FERC's current process for siting LNG terminals. Perhaps most

important, I believe that FERC is not serving the American people well by simply processing LNG proposals submitted by energy companies on a first-come/first-serve basis without regard to the relative public policy benefits of one site over another, particularly in places like New England.

FERC should, instead, consider a regional approach to LNG terminal siting. FERC should step back and take a comprehensive look at all the options, including offshore terminals, remote facilities that are being built in Canada, and other sites in the northeastern United States that are not in the heart of densely populated urban communities. Unfortunately, so far FERC has rejected our pleas for such an approach.

Second, major change is needed to be made in the way FERC coordinates its permitting process with the Coast Guard safety and security reviews. For example, FERC is moving rapidly toward finalizing its environmental impact statement on the KeySpan project in Providence, yet the Coast Guard has not completed its security plan that will answer significant questions about the Federal, State, and local resources that will be required to protect the 950-foot long LNG tankers that will transit the bay up to 100 times per year. With all these questions unanswered, the public's opportunity to comment on the KeySpan project has already ended.

I have many other concerns, which I do not have time to go into today, such as lack of thermal and vapor exclusion zones around LNG ships, the pre-9/11 mind set of DOT and National Fire Protection Association standards for LNG terminals, and the erosion of States' rights to participate in the permitting process. I would like to explore these options with the committee in the legislation that they are preparing for the energy bill.

But I am particularly, again, delighted to welcome Mayor Cicilline. He will be an articulate and effective spokesperson for the city of Providence and the people of Rhode Island.

Thank you, Mr. Chairman, and thank you, Senator Dorgan, and members of the committee.

[The prepared statement of Senator Reed follows:]

PREPARED STATEMENT OF HON. JACK REED, U.S. SENATOR FROM RHODE ISLAND

Mr. Chairman, Ranking Member Dorgan, members of the Subcommittee, thank you for holding this important hearing on the prospects for liquefied natural gas (LNG) in the United States and safety and security issues related to LNG development.

The siting of LNG terminals is an issue that has taken on critical importance for me and for the people of Rhode Island in recent months, as the Federal Energy Regulatory Commission (FERC) is now considering proposals by KeySpan Energy and Weaver's Cove Energy to establish LNG marine terminals in Providence, Rhode Island and Fall River, Massachusetts, respectively.

While I recognize that natural gas is an important and growing component of New England's energy supply, I am extremely concerned about the safety and security risks associated with siting LNG marine terminals in urban communities and requiring LNG tankers to pass by eleven Rhode Island towns and cities and more than 25 miles of densely populated coastline.

I and my colleagues in the Rhode Island delegation have attempted to work with the FERC to identify safer ways to deliver needed LNG to our region. Unfortunately, at every turn, FERC has rejected our proposals. The Commission refused to consider a regional approach to LNG terminal siting, one that would step back and take a comprehensive look at all the options, including offshore terminals, remote facilities that are being built in Canada, and other sites in the northeastern United States that are not in the heart of densely populated urban communities.

Not only did FERC reject these considerations, the Commission even denied our request to extend the public comment period on the Draft Environmental Impact Statement (EIS) for the KeySpan project, even though KeySpan did not object to the extension and the 600-page document came out over the holidays.

FERC's approval process for LNG terminals is deeply flawed and leaves too many questions unanswered. We do not know exactly what impact the arrival and departure of 100 or more LNG tankers each year will have on recreational and commercial traffic on the Bay—or whether any of our bridges will need to be closed during transits—because the Coast Guard has not completed its safety and security reviews. The Coast Guard is working diligently with KeySpan and with its state and local partners to complete those reviews, and I commend all the participants in the working groups for these ongoing efforts, but the Coast Guard has told my office repeatedly that it does not have the resources to adequately secure these LNG tankers and marine terminals, while fulfilling its other post-9/11 responsibilities. The arrival of 950-foot long LNG vessels will require a whole new level of personnel and infrastructure, yet we have no cost estimate and no guarantee these new federal resources will be made available.

Similarly, a tremendous new burden will be placed on our state and local law enforcement and first responder agencies. I recognize KeySpan's commitment in its recent filing before FERC to develop a mechanism to provide recovery of "direct transit-related costs" faced by federal, state and local agencies "on a per-transit basis." I disagree with KeySpan's assumption, however, that other sources of funding will cover the bulk of additional costs associated with the security of the proposed KeySpan terminal. As stated above, the availability of new Coast Guard resources is very uncertain, particularly in the current federal budget climate. In addition, the federal grant programs KeySpan offers to help state and local agencies pursue are all facing dwindling resources, and at least one mentioned in the company's filing, the *Urban Area Security Initiative*, is not available to Rhode Island.

With all of these questions still unanswered, the public's opportunity to comment has now formally ended. It is my understanding that FERC may go to print on the KeySpan Final EIS prior to the completion of the Coast Guard's safety and security reviews. There is no justification for the KeySpan FEIS or the Weaver's Cove FEIS to proceed without incorporating the critical resource requirements that the Coast Guard will forward to FERC after completing both its waterways safety assessments and security workshops, not to mention the workshops for consequence management and emergency response planning that are just beginning in cooperation with the states of Rhode Island and Massachusetts. As the Army Corps of Engineers stated in its January 24th filing with FERC on the KeySpan project, "It is essential that your FEIS fully evaluate the Coast Guard plan and discuss potential navigation impacts and economic consequences both at the facility and as ships maneuver through Narragansett Bay."

I am also concerned about the underlying safety standards for LNG facilities and the KeySpan proposal's compliance with those standards. The 1979 Pipeline Safety Act directs the Secretary of Transportation to consider the "need for remote siting" of LNG terminals, but the Department's safety regulations (49 CFR 193) fail to address this statutory requirement. Moreover, the National Fire Protection Association standards that DOT uses for LNG terminals (NFPA 59A) were written prior to September 11, 2001 and do not even mention a terrorist attack as one of the possible emergency scenarios. The DOT regulations and the NFPA standards do, however, require KeySpan and other LNG plant operators to have in place procedures that address an "uncontrollable emergency" and the "possible need for evacuation of the public in the vicinity of the LNG plant." I have asked FERC to identify what specific steps KeySpan has taken to comply with 49 CFR 193.2509(3), which calls for "coordinating with appropriate local officials in preparation of an emergency evacuation plan, which sets forth the steps required to protect the public in the event of an emergency, including catastrophic failure of an LNG storage tank." I would urge the Subcommittee to make a similar inquiry of FERC, and to inquire whether the Commission will address such a plan in the FEIS.

I am particularly concerned that KeySpan's facility, which has operated for 30 years under the grandfather provision of the Pipeline Safety Act of 1979, may be substantially modified to establish a marine terminal without bringing the plant up to current federal safety standards. Indeed, FERC's Draft EIS states that "the current proceeding provides the opportunity to re-evaluate the existing facility and to raise the level of safety to that required for new LNG facilities." I am disappointed that KeySpan's response to FERC argues that in virtually every area mentioned by the Commission, including Thermal Radiation Exclusion Zones, Vapor Dispersion Zones, Impoundment Capacity, Seismic Design Requirements, it would not be "prac-

tically or economically feasible" for KeySpan to comply with new construction standards.

I want to emphasize to the members of the Subcommittee that I appreciate the important role LNG plays in Rhode Island's energy infrastructure, and I look forward to continuing to look for alternative means to increase the supply of natural gas to our region. It is regrettable that the lingering questions about safety and security standards for LNG, as well as FERC's unwillingness to work with Rhode Island's congressional delegation on comprehensive, regional solutions to our natural gas supply challenges, have brought us to the point where I must oppose the proposed KeySpan and Weaver's Cove LNG terminals.

I again want to thank Chairman Alexander and Senator Dorgan for holding this hearing, and I look forward to working with the Subcommittee to explore a broad list of alternatives—including offshore LNG facilities—to bring more natural gas to our region while minimizing the risk to our citizens.

Thank you.

Senator ALEXANDER. Thank you, Senator Reed. Senator Reed, you are certainly welcome to stay, but if you are leaving now, we will invite the other witnesses on the first panel to come up. Thank you very much.

I will turn to Senator Feinstein for an introduction of Mike Peevey.

STATEMENT OF HON. DIANNE FEINSTEIN, U.S. SENATOR FROM CALIFORNIA

Senator FEINSTEIN. Thank you very much, Mr. Chairman.

I would like to welcome Michael Peevey, the president of the California Public Utilities Commission, to this committee and to our hearing today. Mr. Peevey has been president of the Commission since December 31, 2002. In his capacity, he has had to pick up the pieces after the California energy crisis. So he has been working with the California utilities and others to see that the lights stay on, and he has a particularly difficult challenge coming this summer, when estimates are that California could conceivably have problems. He has the added responsibility of ensuring reliable power at a reasonable cost. Californians pay the highest electricity prices in the continental United States. So this too is not an easy task.

One of the issues relating to reasonably cost power is the cost of fuel. Since our State relies mostly on natural gas-fired power plants, the cost of natural gas plays a large part in determining the overall cost of electricity. In order to reduce costs, we need to do two things: increase supply and reduce demand. So the Commission has been reducing demand for natural gas by overseeing the implementation of the State's renewable portfolio standard and the State's energy efficiency programs.

Now, increasing supply is more complicated. Importing liquefied natural gas is a good option, but one that comes with deep concerns over the siting of terminals such as the safety-related items and national security-related items.

So I for one very much look forward to the testimony of the people today, and I want to welcome Michael Peevey to the Energy Committee.

Mr. PEEVEY. Thank you very much for being so gracious.

Senator ALEXANDER. Thank you very much, Senator Feinstein.

Let me call on Senator Dorgan now. I am going to try to follow the Domenici rule. As I recall what he does is he invites each Sen-

ator to take 5 minutes, then discourages them from doing so, so that we can move on to the witnesses.

[Laughter.]

Senator ALEXANDER. Senator Dorgan.

**STATEMENT OF HON. BYRON DORGAN, U.S. SENATOR
FROM NORTH DAKOTA**

Senator DORGAN. Mr. Chairman, he does that except for the ranking member.

[Laughter.]

Senator ALEXANDER. That is true.

Senator DORGAN. This will be the first of many hearings that you and I and members of the subcommittee on the subject of energy. This is an important hearing, and I am sure that as we begin to try construct the architecture of a new energy bill for this Congress, this subcommittee will play an important role in trying to understand the dimensions of a wide range of issues. Today it is liquefied natural gas, and we have a very impressive list of witnesses.

Let me be mercifully brief as a lesson to others.

Senator ALEXANDER. Thank you, Senator Dorgan.

Senator Bingaman. He was here, but he just stepped out.

Senator Thomas.

**STATEMENT OF HON. CRAIG THOMAS, U.S. SENATOR
FROM WYOMING**

Senator THOMAS. Thank you, Mr. Chairman. I too will be brief. I appreciate having this hearing. I think this is one of the issues that is before us. I certainly hope that we can move forward with an energy policy so that we can get some idea of where we need to be in the next 10 or 15 years and then move in that direction.

I think when we talk about gas and demand and production, we also need to think about the idea that much of it has been used in electric generation, and gas may not be our best fuel to use in that category. So I hope that we keep that in mind as we go.

So thank you. I will not take longer.

Senator ALEXANDER. Senator Landrieu.

**STATEMENT OF HON. MARY L. LANDRIEU, U.S. SENATOR
FROM LOUISIANA**

Senator LANDRIEU. Yes, thank you, Mr. Chairman, and I will be try to be brief as well. As you can imagine, this is a very important issue for the State of Louisiana, which is a major producer of natural gas. I also have a full statement to submit to the record.

I will try to be brief. Let me begin by saying that I am a supporter for constructing liquefied natural gas plants and the distribution of liquefied natural gas.

Clearly, the many hearings that this committee has been through over many years point to the real lack of supply and the need to increase supply. That can be done in a variety of different ways, such as more appropriate domestic drilling for natural gas, both on-shore and offshore, and also, Mr. Chairman, as we know, new technologies have given us some opportunities to import liquefied natural gas.

There are a couple of issues that I would like to raise, on behalf of my State:

One, the safety of LNG plants needs to be first and foremost. Some of these concerns are legitimate concerns. We have had a lot of experience in Louisiana, with a good track record with very dangerous types of plants, and we have managed that very well, considering the kinds of industries that we have—from ammonia plants to chemical plants and to petrochemical plants. We would like to share our positive experiences. We should not just set aside these safety issues, but also address them and speak about them in a very forthright way. There are remedies.

Number two, for the areas of this country that continue to be the platforms for exploration, the platforms for generation and are also welcoming and friendly hosts to the oil and gas industry, whether it is the State of Louisiana or the State of Texas or the State of Wyoming or off the shores of some other States, should be recognized in a positive way because there are some areas of the country that are either hesitant or just downright hostile or not inviting for their own reasons. But for those parts of this country that have been supportive and that continue to be host, I would urge this committee to consider some fair options for either the revenue-sharing provisions for environmental impacts that may or may not be there or just other general impacts in terms of being the host.

While I do not want to get into the details of the FERC oversight, I will say that a regional approach or a national approach is most certainly warranted.

And finally, Mr. Chairman, we know that there is at least one other nation in the world, Japan, which has had a very successful history in liquefied natural gas, an island not as blessed as the United States with natural resources. We do not have to look to other countries to get some positive feedback about how you go about using liquefied natural gas in a safe way that brings down prices, and helps U.S. industries remain competitive. We need to just address these issues forthrightly.

There is more in my statement about this, but I would be remiss, Mr. Chairman, if I did not raise the issue of the host States' concerns. We are happy to support the industry, but it is time for us to have some sort of compensation for continuing to be the host in the country.

[The prepared statement of Senator Landrieu follows:]

PREPARED STATEMENT OF HON. MARY L. LANDRIEU, U.S. SENATOR FROM LOUISIANA

This Committee is well aware that a supply and demand gap has created a sharp increase in natural gas prices over the last few years affecting industries that rely on natural gas as a feedstock and to run their plants. In Louisiana, natural gas is the major source of energy that runs our chemical and power plants.

Without it, industries in my state will continue to lose their competitive edge.

Take for example CF Industries in Donaldsonville, Louisiana. For them and other members of the ammonia industry the cost of natural gas can represent 70 to 90% of the total cost of manufacturing its products. CF Industries has lost 38 people over the last two years.

This effect is industry-wide. Since 1998, the Louisiana Ammonia Producers, who account for approximately 40% of the U.S. production of ammonia, have gone from 9 companies employing more than 3,500 employees to 3 companies employing less than 1,000. The impact of these lost jobs has a spillover effect: for every job lost in a chemical plant another 4.6 jobs are lost in the parish where that plant is located.

So, the need for more natural gas is clear, what is not clear is how we as a nation plan to meet this demand over the long haul. Our focus has turned to increasing the importation of Liquefied Natural Gas (LNG) as a means to close the gap between supply and demand.

However, I would not be serving the people of my state well if I did not raise a red flag as to the possible long term consequences of this policy.

In spite of the fact that more gas is needed in every region of the country, it does not appear the plan to import LNG is as national in scope. Of the 30 LNG plants proposed around the country, the only ones that appear to be actually moving forward aggressively are those on and off the coasts of Louisiana and Texas. In fact, we will hear testimony today about specific projects in Rhode Island and California that have run into roadblocks.

Those of us in the Gulf of Mexico are well aware of what makes us so appealing to be the gateway for LNG to the rest of the country. First and foremost, we have extensive experience and expertise in the production and distribution of natural gas. In addition, and perhaps most importantly, we have a ready-made network of 20,000 miles of pipeline crisscrossing our state to deliver gas to the markets where it is needed.

Building LNG facilities on and off the coast of Louisiana certainly would bring some benefits to the State and many benefits to the nation. An increase in the supply of gas in the short term could halt the tide of further job losses in the chemical industry. Louisiana is now the second largest producer of chemicals in the U.S. It is estimated that each new LNG terminal could add, on average, 1 billion cubic feet of gas to the state's supply. And it would bring down costs.

While gas prices have hovered near \$6 per thousand cubic feet, Stephen Brown, the Federal Reserve's chief energy economist for the Dallas region, estimates that if a number of these LNG projects are up and running, prices could drop as low as \$3.25 per thousand cubic feet. This additional supply of gas could be the difference between saving our industry \$398 million a year in gas costs or having them rise \$1.1 billion a year.

However, as much as Louisiana and the rest of the nation need new sources of gas, we must address at least three critical issues as we move to meet the rising demand.

First, states and communities like Louisiana that are asked and in some sense required to serve as a platform for the energy needs of the nation as a whole should be directly compensated through a revenue sharing mechanism that recognizes the impact these facilities will have on them.

Secondly, the safety issues related to siting these facilities in one region of the country in order to deliver gas to the other regions of the country must be fully considered. As a result of September 2001, safety has taken on an even more important role in shoring-up the security around our nation's critical infrastructure. The security around our LNG facilities such as ships, terminals and storage areas will have to be given an even higher priority. I am pleased that the recently released Sandia report asserts that the risk arising from both intentional and accident events can be significantly reduced and managed with appropriate security, planning, prevention, and mitigation. In addition, we must also recognize that since international LNG shipping began in 1959, tankers have carried 40,000 LNG cargoes without a serious accident at sea or in port—partly due to the double hulled design of tankers.

Finally, there may be environmental impacts pertaining to the use of offshore LNG facilities that need to be addressed. Some conservation groups as well as NOAA have raised appropriate concerns about the potential impact of offshore facilities on marine life (redfish, shrimp, et al.) in the Gulf of Mexico. Perhaps these concerns will prove to be unwarranted. However, we cannot ignore them.

CONCLUSION

We have a model for how to use LNG in an efficient and safe manner. Japan is the world's largest LNG importer and relies on LNG for about 97% of its natural gas consumption. Tokyo Bay has 5 LNG terminals which receive about 8 large shipments of LNG per week without incident. I believe that the Sandia Report together with lessons learned from the Japanese experience should provide us with the knowledge needed to move forward and use LNG in a safe, responsible and environmentally sensitive manner.

Senator ALEXANDER. Thank you.

Senator Feinstein, do you have other things you would like to say?

Senator FEINSTEIN. If I might, just one other question.

I had the pleasure yesterday of meeting with Mr. Giles, who is going to be testifying, of Sound Energy Solutions, the parent company of which is Mitsubishi who, as Senator Landrieu referred, has at least five terminals in Tokyo.

This terminal or California terminals or additional terminals today are being built in a post-9/11 world where one of the things that we have to think about are targets in metropolitan areas. As I look at the various proposals on the west coast, it seems to me that out-of-harbor locations are better locations. Now, I could be wrong. Mr. Giles and I debated that yesterday because his proposal in the middle next to a big container facility in the Long Beach port area. Long Beach, Los Angeles receives 40 percent of the container traffic coming into our Nation. So one has to look at this as a potential target, which would have a dramatic impact on the economy of America if it is devastated.

Now, you might say, well the devastation would only be a mile wide. Nonetheless, that is considerable. For the Federal Energy Regulatory Commission that is going to be concerned with siting, I think this is a valid consideration for the first time in this industry in a post-9/11 world.

Senator ALEXANDER. Thank you, Senator Feinstein.

Senator Salazar.

Senator SALAZAR. I do not have an opening statement. I look forward to the hearing.

Senator ALEXANDER. All of the full opening statements will be included in the record.

We look now forward to the testimony of the first panel. I will invite each of you to just go in order. Why do we not go with the mayor first and then Mr. Peevey, then Mr. Giles. The mayor and Mr. Peevey have been introduced, but let me properly introduce Mr. Thomas Giles, executive vice president and chief executive officer of Sound Energy Solutions, Mitsubishi. Senator Feinstein just mentioned him. Mr. Rick Grant, president and chief executive officer of Distrigas, Everett LNG Terminal in Boston, Massachusetts. Mr. Mark Robinson, Director of the Office of Energy Projects, Federal Energy Regulatory Commission. We have invited Mr. Robinson to be on both panels, the one about siting and the one about safety.

May I ask the witnesses if you would summarize your comments in, say, 5 minutes. That will produce a better exchange between the Senators and you, and we will certainly put all of your comments in our record.

Mayor Cicilline.

**STATEMENT OF DAVID N. CICILLINE, MAYOR,
CITY OF PROVIDENCE, RI**

Mr. CICILLINE. Mr. Chairman, Ranking Member Dorgan, members of the subcommittee, thank you for offering me this opportunity to speak to you about the concerns I have as mayor about the current review and approval process used by the Federal Energy Regulatory Commission for liquefied natural gas projects. It is a great honor to testify before you today about this very important subject.

I want to thank Senator Reed for inviting me to participate in this hearing and thank him for his leadership on this issue as well.

I have submitted formal written testimony which the committee has, but in the interest of time, I will, of course, provide a summary of my remarks.

My concerns are shared by many, if not all, of the elected leaders in Rhode Island. From our congressional delegation, to our attorney general, Patrick Lynch, and others, Rhode Island's elected officials have expressed grave concern about the proposal I am about to speak about and the way that it has been evaluated by FERC.

Given the debate in the scientific community over some of the assumptions and models employed by FERC, given the recent findings of the Sandia Labs report, given the serious flaws in the way FERC administers the EIS process, and most significantly, given post-September 11 homeland security realities, it is time for a comprehensive review and reform of the LNG siting approval process.

Our experience in Providence with FERC on the KeySpan proposal demonstrates clearly the failings of the current process. Two fundamental issues are posed by the Providence KeySpan proposal and the current FERC process has completely failed in its responsibility to address these issues.

The first essential question is, should major LNG facilities and, in particular, marine terminals be located in densely populated urban centers? Without a doubt, the answer to this question is no.

The draft EIS, in fact, acknowledges the risks of LNG and, in particular, of the threat of terrorism, but states that these risks can be "managed." The best way to manage these risks is through remote facility siting. Risks cannot be adequately managed in an urban setting. The risks posed are too numerous. The dangers are simply too great. This is the wrong proposal at the wrong place at the wrong time.

The recent Sandia Labs report raises particular concern, and FERC must incorporate the findings of this report into its review process and review criteria. The Sandia report defines the risk zone for flammable vapor dispersion from an intentional attack on an LNG tanker as 1.5 miles. The 1.5-mile zone in Providence alone encompasses thousands of permanent residences, several hospitals, including the regional trauma center, several elementary and middle schools, child care centers, college campuses, interstate highways, and most of downtown. I have with me on my right for the committee's viewing a photograph showing the terminal in Providence and what falls within this 1.5-mile zone.

History has shown that terrorists operating in this country seek high-profile targets with the potential for large-scale destruction. We should not be in the business of creating invitations to our enemies.

The second fundamental question posed by this proposal is, should an LNG facility operating under grandfathered safety standards, that is, a facility that does not meet current safety standards, expand? I fully agree with the conclusion of the draft EIS that "the proposed project represents a significant modification to the design and historical mode of operation, providing the opportunity to re-evaluate the existing facility and to raise the level of safety to that required for new LNG facilities."

While the draft EIS makes this statement, FERC does not take the logical next step of requiring that the facility be brought up to

current code. But where FERC hedges, there should be no hedging. If this proposal is approved, the entire facility must, at the very least, be brought up to current safety standards. A facility that could not be permitted for construction today must not be expanded. The standards in place for the original permitting of the Providence facility did not account for the reality of terrorist threats. The current risks of terrorist strikes on LNG facilities dictates the end of grandfathering.

But a close review of FERC's current standards reveals they are inadequate.

I fully endorse the analysis and conclusions of Providence Fire Chief David Costa who called for major upgrades to FERC's safety standards. I have submitted with my written comments a copy of the letter sent by Chief Costa to FERC where he details his concerns regarding FERC's inadequate safety standards, and I would ask that this letter be part of the record.

Senator ALEXANDER. It will be.

Mr. CICILLINE. Thank you.

The time has come for FERC to replace current minimum safety standards with updated, best-in-class standards. The minimum should no longer be tolerated.

The draft EIS called on KeySpan to conduct a thorough review of the measures required to bring the current and proposed facility up to present-day safety standards. I supported this requirement and called upon FERC to extend the comment period to allow for public review and comment on this analysis. FERC denied this request, as they denied the request for an extension by our entire congressional delegation, including Senator Reed.

KeySpan contends meeting these minimum standards would be too costly, too onerous, or that they are essentially close enough as it is.

Senator ALEXANDER. If you could wrap up.

Mr. CICILLINE. Certainly.

I would also just ask the committee to reference particularly the letter I have submitted from the U.S. Army Corps of Engineers that talks about very specific concerns about this proposal.

And in conclusion, I would thank the committee for focusing its attention on this important issue and ask the committee to build reform around the latest science, higher safety standards, the reality of the threat of terrorism in the 21st century, making sure key decisions are only made after all of the necessary facts have been determined, analyzing proposals in a comprehensive, regional way, not project by project, rationalizing the process for evaluating alternatives, and finally ending the dangerous practice of grandfathering.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Cicilline follows:]

PREPARED STATEMENT OF DAVID N. CICILLINE, MAYOR, PROVIDENCE, RI

Mr. Chairman, Ranking Member Dorgan, members of the Subcommittee, thank you for offering me this opportunity to speak to you about the concerns I have—as a Mayor—about the current review and approval process used by the Federal Energy Regulatory Commission (FERC) for Liquefied Natural Gas (LNG) projects.

I want to thank Senator Jack Reed for inviting me to participate in this hearing. I also thank him for his leadership on this issue. I urge members to carefully review

Senator Reed's written statement to the Subcommittee, in which he highlights many critically important issues related to LNG safety.

My concerns about the FERC process arise from my first-hand experience with KeySpan Energy's proposal to convert its current peak-shaving facility in Providence, Rhode Island to a marine delivery terminal.

The proposal in Providence calls for modifying a thirty-year-old facility that currently receives LNG exclusively through truck deliveries. The facility sits on a small parcel of land, slightly under 16.5 acres, in the midst of industrial and other commercial facilities. Nearby is a residential neighborhood, an interstate highway, schools, hospitals and more. The population of Providence is approximately 175,000, with this number nearly doubling on a typical weekday thanks to commuters, visitors, and students drawn to the City.

The plans call for marine delivery approximately every five days. The ships will travel up Narragansett Bay and up the Providence River, passing more than twenty-five miles of densely populated coastline. The Providence harbor, where this facility is located, is currently a busy port with heavy commercial and recreational use.

As Mayor of Providence I have strongly opposed the KeySpan LNG Facility upgrade project. I object because this proposal presents an unacceptable threat to public safety and to the immediate and long-term economic development of Providence.

I am here before you because the FERC process has, to date, failed to adequately account for these concerns. The review, to date, has been dangerously, and irresponsibly, insufficient.

Given the debate in the scientific community over some of the assumptions and models employed by FERC, given the recent findings of the Sandia Labs report, and most significantly given post 9/11 homeland security realities it is time for a comprehensive review and reform of the LNG siting approval process.

The Draft Environmental Impact Statement (EIS) for the Providence proposal reaches the conclusion that "construction and operation of the KeySpan LNG project would result in limited adverse environmental impacts."

It is my firm belief that this conclusion is wrong.

The conclusions reached are, in large part, flawed because FERC's current analysis is based on assumptions, analyses, standards, and research that are highly questionable—particularly in light of the current homeland security environment.

Two fundamental issues are posed by this proposal and the current FERC process has completely failed in its responsibility to address these issues.

The first essential question is: Should major LNG facilities, and in particular marine terminals, be located in densely populated urban centers?

Without a doubt, the answer to this question is: No.

The Draft EIS in fact acknowledges the risks of LNG, and in particular of the threat of terrorism, but states these risks can be "managed." The best way to manage these risks is through remote facility siting. Risks cannot be adequately managed in an urban setting. The risks posed are too numerous. The dangers are simply too great. Given this fundamental truth, this proposal should be rejected.

Simply put: This is the wrong proposal, at the wrong place, at the wrong time.

For a city facing the potential development of a marine delivery terminal, the recent Sandia Labs report raises particular concern. The report defines the risk zone for flammable vapor dispersion from an intentional attack on an LNG tanker as 1.5 miles. And this is not a worst-case scenario.

In fact, if the U.S. Department of Transportation (DOT) vapor dispersion standard of 49 CFR 193 were used, this zone would be considerably larger.

As it is, the 1.5 mile zone in Providence alone encompasses thousands of permanent residences, several hospitals (including the regional trauma center), several elementary and middle schools, child care centers, college campuses, interstate highways, and most of downtown Providence.

I have with me a photograph showing the terminal in Providence and what falls within this 1.5 mile zone.

The scope of what lies within this zone underscores the need for FERC to reject siting a marine delivery terminal in a densely populated urban center. Indeed, the potential large-scale damage will raise the risk level for the Providence facility to an unacceptable level.

History has shown that terrorists operating in this country seek high-profile targets with the potential for large-scale destruction. We should not be in the business of creating invitations to our enemies.

Any further analysis must consider the cascading events which would occur in various disaster scenarios at this proposed facility. This is particularly important given the other hazardous materials in immediate proximity to the KeySpan facility.

The second fundamental question posed by this proposal is: Should an LNG facility operating under grandfathered safety standards expand?

I fully agree with the conclusion of the Draft EIS that “the proposed project represents a significant modification to the design and historical mode of operation, providing the opportunity to re-evaluate the existing facility and to raise the level of safety to that required for new LNG facilities.”

While the Draft EIS makes this statement, FERC does not take the logical next step of requiring that the facility be brought up to current code.

But where FERC hedges, I am adamant: If this proposal is approved, the entire facility must—at least—be brought up to current safety standards. A facility that could not be permitted for construction today must not be expanded.

Grandfathering is a risky and highly suspect practice, and one that has been rejected by other federal regulatory authorities in other hazardous material industries. When major safety upgrades were adopted for chemical plants in the early 1990s, neither OSHA nor EPA permitted grandfathering of existing facilities.

Grandfathering is particularly inappropriate when there has been a major shift in circumstances such as the advent of the war on terror. The standards in place for the original permitting of the Providence facility had no provisions for terrorism. The current risk of terrorist strikes on LNG facilities dictates the end of grandfathering.

By FERC’s own standards, due to the disparity between the siting of the plant and current regulations, land and buildings not owned by KeySpan fall within FERC’s current thermal exclusion zones for the existing plant.

But this analysis does not tell the whole story. A review of the data clearly reveals FERC’s current standards are inadequate.

I fully endorse the analysis and conclusions of Providence Fire Chief David Costa who has called for major upgrades to FERC’s safety standards. I have submitted with my written testimony a copy of the letter sent by Chief Costa to FERC where he details his concerns over FERC’s inadequate safety standards and I would ask that this letter be part of the record.*

As explained by Chief Costa, we need to re-write a standard which allows civilians not employed in the LNG industry in a zone only safe for a trained fire professional in protective equipment.

A standard which calls for sheltering-in-place of, among others, school children—ignoring the reality that any incident would prompt parents and others to rush to the scene—is dangerously unrealistic and should be scrapped.

The time has come for FERC to replace current minimum safety standards with updated, best-in-class standards. The minimum should no longer be tolerated.

The Draft EIS called on KeySpan to conduct a thorough review of the measures required to bring the current and proposed facility up to present day safety standards.

I supported this requirement, and called for FERC to extend the comment period to allow for public review and comment on this analysis. I firmly believe the analysis and findings of this study are simply too important to go without such review and comment.

FERC denied this request.

The City is reviewing this report, and frankly we are deeply troubled by what we have read. To begin with, KeySpan contends—contrary to logic and contradicting the conclusion of FERC staff—this is not a significant modification to the existing facility.

Putting that debate aside, the bottom line is that KeySpan acknowledges they cannot—and KeySpan says they will not—bring this facility up to present day minimum safety standards.

KeySpan contends meeting these minimum standards would be too costly, too onerous, or that they already come close enough.

These answers are unacceptable. Close enough is not good enough. KeySpan refuses to bear the cost of safety improvements. You know and I know, this means others—the people of Providence—could be the ones to pay the price.

The fact is no Draft EIS should have been published if KeySpan could not meet or intend to meet current DOT safety standards. FERC knew the KeySpan facility is not in compliance with current safety standards. The failure of the Draft EIS to include a thorough discussion of this issue is a very serious shortcoming.

During this process, the City has repeatedly said that the final EIS should not be issued until a comprehensive safety and emergency response plan has been developed and agreed upon by all parties.

Absent such a plan, it is not possible for FERC, public officials, or the general public to determine the risk and potential impact of this proposal. An evaluation without a plan in place is nothing more than speculation and conjecture.

*All attachments have been retained in subcommittee files.

The Draft EIS reaches conclusions about the impact of this proposal on safety operations and on the use of Narragansett Bay and Providence Harbor, however, the Coast Guard has not concluded its security review and has not yet made its security recommendations. Without that information it is simply impossible to reach a valid conclusion on the risks or the impact of this proposal. But FERC does. This is wrong.

FERC's isolationism extends to the U.S. Army Corps of Engineers, which has significant concerns about the KeySpan proposal. I have included with my written testimony, and ask that it be part of the record, the letter on the Draft EIS submitted by the Corps.

This letter is alarming. It clearly reveals that FERC did not adequately consult with the Corps—in violation of the Congressional intent behind the National Environmental Policy Act which created the EIS process and identified the federal agencies which should participate.

The Corps has very serious reservations about this proposal because of the impact a ship docked at the port would have on the federal navigation channel. The proposal, to quote the letter, “would cause LNG vessels to be completely moored within the limits of our Federal project. Such an encroachment is contrary to Corps policy.”

The Corps, to quote further, has “serious concerns about the permissibility due to the potential significant impacts on navigation such an encroachment would cause in the Providence river, coupled with security zone restrictions” detailed later in the letter.

This and the other very serious issues identified by the Corps in their letter should have been resolved before FERC issued its Draft EIS. The failure of FERC to responsibly address such issues and to conduct the EIS process as Congress intended raises the very real question of whether Congress should now require review and approval of every FERC Draft EIS by at least one other cooperating agency in the NEPA process prior to its release.

Clearly, FERC cannot be trusted to follow Congressional intent on its own.

Critically important issues of safety and security have been sacrificed in FERC's rush to judgment.

There is also a need for FERC to change the methods used to analyze alternatives. In the case of the Draft EIS for the KeySpan proposal, this section is fundamentally flawed.

It was a foregone conclusion no alternative would be acceptable once FERC used the project's very own goals as criteria to evaluate alternatives, including: “converting the existing KeySpan LNG facility to an LNG terminal capable of receiving marine deliveries and augmenting the facility's vaporization capability.”

FERC needs to critically evaluate this project goal, not blindly accept it as a premise by which to judge alternatives. With this as a requirement, by definition no other proposal could meet all the goals or standards for an alternative to be acceptable.

There should, truthfully, be only one criterion by which to judge this proposal and potential alternatives: What is the safest way to provide the region's future LNG needs?

By that criterion, this proposal is far from the best alternative.

Rejecting this proposal, by FERC's own acknowledgement, will not undermine the energy supply to the region.

To quote from the Draft EIS: “We believe that the most likely result of adopting the no action alternative would be development of other LNG facilities or additional pipeline capacity to meet the increasing demand for natural gas in the New England region.” (3-2)

This is an important point: There is no supply imperative requiring approval of this risky proposal.

The safety criteria used by FERC to evaluate—and dismiss—alternatives underscore that expanding this grandfathered facility is unacceptable.

To quote from the Draft EIS: “We consider it preferable to locate LNG terminals in areas that are not close to population centers and/or residences. We also feel it is preferable for LNG ships to transit far from residential and commercially developed shorelines.” (3-14)

The KeySpan proposal violates both of these criteria. And yet, the Draft EIS endorses the Providence proposal above the alternatives considered.

Additionally, concerning the LNG terminal footprint: “Based on the proposed design and the need to contain the thermal exclusion zone, a waterfront site of at least 21 acres would be preferable to accommodate the proposed configuration of the LNG unloading, storage and sendout facilities. An ideal waterfront site available for development would include area in excess of the exclusion zone, which would provide an additional buffer from development.” (3-14)

The Providence facility does not include "area in excess of the exclusion zone." In fact it does not include area equal to the exclusion zone. The KeySpan facility is located on a mere 16.47 acres, well under FERC's minimum 21 acre standard.

It is patently ridiculous for FERC to set standards by which it rejects alternatives, and then ignore the fact that the project under consideration is far from meeting these very same standards. The facts that led to the rejection of the alternatives, dictate the rejection of this proposal.

Clearly there is something wrong here.

By one set of standards this project is unacceptable. And yet the process moves inexorably forward reaching the conclusion that the KeySpan project is the best option possible.

These conclusions cannot—and should not—be reconciled. This is nothing less than bureaucratic schizophrenia.

The FERC process has also insufficiently accounted for the immediate and long-term economic impact the proposal will have on the City of Providence.

In terms of the immediate impact, the real and perceived danger presented by this expanded facility will, no doubt, lower property values in the surrounding area. This, in turn, will lower the City's property tax revenue.

Ironically, a project that will add to the City's public safety duties and expenses, will at the same time lead to a reduction in the very resources the City will need. The impact of this burden on Providence must be considered by FERC.

But the greatest impact of this proposal will be its negative impact on the proposed redevelopment of the City's waterfront. This proposed LNG project is completely at odds with my vision for the future of Providence, and in particular with the City's ambitious Narragansett Landing plans.

The Providence waterfront should be one of the City's greatest assets. But much of it is now scarred by the declining remains of an old economy. We have an exciting vision for Narragansett Landing and have hired the internationally recognized urban planning firm of Sasaki Associates to develop comprehensive plans to turn an eyesore into an economic engine. A new, residential, commercial, recreational neighborhood will open new employment opportunities and expand the tax base for the benefit of all city residents.

This project will ultimately encompass the redevelopment of more than 250 acres, including 100 acres of waterfront property. We estimate this area will be home to more than 6,000 residents. We also envision the development of 3 major hotels providing approximately 1,000 much-needed rooms to our city's capacity. The plans call for 12 new office buildings, a park, open space and a 500 boat marina.

Marine delivery of LNG is wholly incompatible with this vision. The KeySpan project will seriously impede the City's ability to attract the investment and developer interest required to achieve our goals. The proposal will lead to a terrible waste of a major economic opportunity for Providence.

Our plans for opening the waterfront for recreational use will fail if this part of the bay receives weekly LNG shipments that will require the effective shut down of the water. Boat owners have numerous other options for harboring their boats in this area, and surely they will find facilities where they will be able to use their boats any time they want. Boat owners will not want to dock in a location where they will have to constantly monitor the timing of LNG deliveries and the size and duration of security zones.

In closing, I want to thank the Subcommittee for focusing attention on this important issue. I believe the process for reviewing and approving LNG projects is seriously flawed and needs to be reformed.

Reform must be built around:

- The latest science
- Higher safety standards
- The reality of the threat of terrorism
- Making sure key decisions are only made after all the necessary facts have been determined
- Analyzing proposals in a comprehensive, regional way, not project-by-project.
- Rationalizing the process for evaluating alternatives
- And, finally, ending the dangerous practice of grandfathering

Thank you very much.

Senator ALEXANDER. Thank you, Mayor.
Mr. Peevey.

STATEMENT OF MICHAEL R. PEEVEY, PRESIDENT, CALIFORNIA PUBLIC UTILITIES COMMISSION, SAN FRANCISCO, CA

Mr. PEEVEY. Mr. Chairman and members of the subcommittee, thank you very much for inviting me as a representative of the California Public Utilities Commission to participate in these hearings.

We appreciate your willingness to consider the State governments' perspective on natural gas matters, which is consistent with previous acts of Congress such as the Natural Gas Act and the Natural Gas Pipeline Safety Act, where Congress recognized the important role of State Commissions in the regulation of natural gas. It is also noteworthy that in the 1970's, when the State of California first considered proposals to construct LNG facilities, the Federal Energy Regulatory Commission and the U.S. Department of Energy also recognized California's important role in deciding siting and safety matters for new LNG import facilities. The FERC and the California Public Utilities Commission—this is in the 1970's—concurrently held hearings on the proposed LNG facilities at Point Conception, California, including jointly held hearings on certain seismic issues. Neither the FERC nor the CPUC challenged each other's jurisdiction and both agencies ultimately issued certificates of public convenience and necessity for the proposed LNG facility. Indeed, because State law at that time precluded LNG facilities from being built near population centers, the FERC had deferred to State law by rejecting the proposed site for LNG facilities at the city of Oxnard in favor of the alternative proposal at a more remote site, Point Conception.

The only reason the LNG facilities were not constructed at Point Conception was due to market forces. In the early 1980's, the price of natural gas domestically produced significantly decreased and the project sponsors chose not to go forward.

The California Public Utilities Commission respectfully submits that any new legislation should reflect concurrent jurisdiction, which includes the States in the siting and safety of LNG facilities within their borders, and promotes cooperative arrangements between the Federal Government and the States. This type of approach worked well in the 1970's in California, currently works well under the Deepwater Ports Act, and we believe would work well in the future.

Now, let there be no mistake. We at the California Public Utilities Commission recognize there is a need for additional supplies of natural gas from LNG facilities. We agree with the FERC that LNG terminals are needed to provide reliable supplies of natural gas and help put downward pressure on the already high prices of natural gas in North America. In fact, in December 2003, the PUC and the California Energy Commission jointly sponsored a workshop in San Francisco which extensively reviewed data and studies concerning the production of natural gas in North America, the forecasts for demand, and the clear need for LNG facilities in the future. The FERC participated in that program with FERC staff.

As a result of that workshop, in January 2004, the PUC issued a rulemaking proceeding to establish rules to ensure reliable, long-term supplies of natural gas to California. One of the purposes was

to facilitate access for natural gas from LNG facilities to the intra-state pipelines on the west coast of California, which are pipelines regulated by the California PUC and exempt from Federal regulation under sections 1(b) and 1(c) of the Natural Gas Act.

The California PUC has already issued a decision in phase I in that rulemaking proceeding wherein our Commission assured project sponsors that if they build the LNG facilities to supply natural gas to California's public utilities, the utilities will interconnect with those facilities. The PUC ordered PG&E, Southern California Gas Company, and San Diego Gas and Electric to submit nondiscriminatory, open access tariffs for all new sources of natural gas supply, including potential supplies from LNG facilities.

Due to the high prices of natural gas, there are presently numerous proposals for LNG facilities to be constructed on the west coast. According to FERC's web site, there are two proposed sites in Federal waters offshore southern California. There are two proposed sites in Baja California, and there is one proposed site in southern California in an application filed with FERC by Mr. Giles' firm.

To emphasize, we accept and see the need for natural gas from LNG facilities in California. We see that as vital for the State's economic well-being.

In addition to helping ensure reliable supplies at reasonable prices, the PUC has the responsibility under State law for making sure that intrastate natural gas facilities are sited, constructed, and operated in a safe manner. The State law in California is very clear that the California PUC has jurisdiction over proposed LNG facilities in California. The PUC obviously does not have jurisdiction over proposed terminals in Federal waters, in Baja California, or other States.

In addition, the PUC has been certified by the U.S. Department of Transportation pursuant to the Federal Natural Gas Pipeline Safety Act to inspect all intrastate natural gas facilities within California and to enforce the Federal natural gas pipeline safety regulations, including liquefied natural gas safety regulations promulgated by the DOT. In order to become a certified State agency, in General Order 112-E, the PUC adopted the Federal safety regulations as part of our own minimum standards. The California Public Utilities Commission has a much better understanding in our view than the FERC of the local conditions involving proposed LNG facilities in California, such as seismic issues, as well as terrorism.

The process used by the PUC, which allows parties to participate in evidentiary hearings, helps educate our Commission, as well as the general public, on the safety issues involved. This also results in much more confidence by the public in the PUC's conclusions, which will result from the hearing on the safety concerns, compared to a process where disputes of material fact are not set for hearing and interested parties are not provided a meaningful opportunity to participate.

Rather than consider legislation for exclusive Federal jurisdiction, we would hope that Congress would consider legislation for concurrent Federal/State jurisdiction and not preempt State government. Instead of exclusiveness, we would hope Congress would

consider inclusiveness. There is a much greater chance of public acceptance of LNG facilities when the State has—

Senator ALEXANDER. I am going to try to keep everybody pretty close to 5 minutes so we will have time to question you.

Mr. PEEVEY. So I will just sum up.

For a variety of reasons, I would say that the California Public Utilities Commission recommends that any new legislation being considered or amendments to the Energy Act explicitly provide that the States' jurisdiction be concurrent with the Federal Government's jurisdiction.

Thank you.

[The prepared statement of Mr. Peevey follows:]

PREPARED STATEMENT OF MICHAEL R. PEEVEY, PRESIDENT, CALIFORNIA PUBLIC UTILITIES COMMISSION

Mr. Chairman and Members of the Subcommittee. Thank you very much for inviting me, as a representative of the California Public Utilities Commission, to participate in these hearings concerning the development of liquefied natural gas (LNG) facilities, which is a timely and very important issue to the nation and to California. It is an honor to appear before you to present the California Public Utilities Commission's views concerning new LNG facilities along or near the West Coast of California.

We especially appreciate your willingness to consider the state governments' perspective on natural gas matters, which is consistent with previous acts of Congress, the Natural Gas Act and the Natural Gas Pipeline Safety Act, where Congress recognized the important role of state Commissions in the regulation of natural gas. It is also noteworthy that in the 1970s, when the State of California first considered proposals to construct LNG facilities, the Federal Energy Regulatory Commission (FERC) and the U.S. Department of Energy also recognized the State of California's important role in deciding the siting and safety matters for new LNG import facilities. The FERC and the California Public Utilities Commission concurrently held hearings on the proposed LNG facilities at Point Conception, California, including jointly held hearings on certain seismic issues. Neither the FERC nor the California Public Utilities Commission challenged each others' jurisdiction and both agencies ultimately issued certificates of public convenience and necessity for the proposed LNG facilities. Indeed, because state law at that time precluded LNG facilities from being built near population centers, the FERC had deferred to state law by rejecting the proposed site for LNG facilities at the City of Oxnard, California in favor of the alternative proposal at the more remote site at Point Conception, California. The only reason the LNG facilities were never constructed at Point Conception was due to market forces. In the early 1980s, the price of natural gas significantly decreased and the project sponsors chose not to go forward with the LNG project, even though they had complete authorization to do so from the FERC and the California Public Utilities Commission.

The California Public Utilities Commission respectfully submits that any new legislation should reflect concurrent jurisdiction, which includes the states in the siting and safety of LNG facilities within their borders, and promotes cooperative arrangements between the federal government and the states. This type of approach worked well in the 1970s in California, currently works well under the Deepwater Ports Act and we believe would work well in the future.

I. THE NEED FOR LNG FACILITIES

The California Public Utilities Commission recognizes that there is a need for additional sources of natural gas supplies from LNG facilities. The California Public Utilities Commission agrees with the Federal Energy Regulatory Commission that LNG terminals are needed to provide reliable supplies of natural gas and help put downward pressure on the already high prices for natural gas in North America. In fact, in December, 2003, the California Public Utilities Commission and the California Energy Commission jointly sponsored a workshop in San Francisco, which extensively reviewed data and studies concerning the production of natural gas in North America, the forecasts for demand for natural gas and the clear need for LNG facilities in the near future. We were joined by two members of the Federal Energy Regulatory Commission's Staff, who actively participated by asking questions and in making a presentation in our workshop. That workshop demonstrated not only

the need for new LNG terminals on the West Coast, but also how well our state agencies and the FERC could work together in addressing significant issues involving natural gas supplies and infrastructure.

As a result of that workshop, in January, 2004, the California Public Utilities Commission instituted a rulemaking proceeding to establish rules to ensure reliable, long-term supplies of natural gas to California. One of its purposes was to facilitate access for natural gas from LNG facilities to the intrastate pipelines on the West Coast of California, which are pipelines regulated by the California Public Utilities Commission and exempt from federal regulation under sections (b) and 1(c) of the Natural Gas Act. The California Public Utilities Commission has already issued a decision in Phase I in that rulemaking proceeding, wherein our Commission assured project sponsors that if they build the LNG facilities to supply natural gas into the California public utilities' intrastate pipelines, the utilities will interconnect with those facilities. The California Public Utilities Commission ordered Pacific Gas & Electric Company, Southern California Gas Company and San Diego Gas & Electric Company to submit non-discriminatory open access tariffs for all new sources of natural gas supply, including potential supplies from LNG facilities.

Due to the high prices of natural gas, there are presently numerous proposals for LNG facilities to be constructed along the West Coast, which could provide substantial volumes of natural gas to California. According to the FERC's website as of February 7, 2005, in pending applications filed with MARAD and the Coast Guard, there are two proposed sites in federal waters offshore Southern California (i.e., BHP Billion for 1.5 Bcf/d and Crystal Energy for .5 Bcf/d), there are two proposed sites in Baja California, Mexico (i.e., Sempra and Shell for 1.0 Bcf/d and Chevron Texaco for 1.4 Bcf/d), there is one proposed site in Southern California in an application filed with the FERC (i.e., Sound Energy Solutions for 0.7 Bcf/d) and there is a potential site offshore Southern California identified by the project sponsor (i.e., Chevron Texaco 0.75 Bcf/d). In addition, a new proposal for a floating storage and regasification unit (FSRU) offshore of Baja California, Mexico was recently announced in an article in the San Diego Union-Tribune on February 3, 2005. According to the San Diego Union-Tribune's article, "Energy experts say only one or two liquefied natural gas receiving terminals are needed to supply the Baja California-Southern California region." The California Public Utilities Commission has made no determination as to how many LNG terminals are needed in this region, but suffice it to say that nobody expects all of these projects are necessary or will be built.

We therefore see natural gas from LNG facilities, as well as from interstate pipelines and California production, as being vital sources of future supplies of natural gas to California, which are necessary for California's economic growth and well being. The California Public Utilities Commission and the California Energy Commission are coordinated under and guided by the State of California's Integrated Energy Policy Report that recognizes the need to embrace additional sources of natural gas supply, such as from LNG facilities. The Integrated Energy Policy Report further recognizes that energy efficiency, conservation efforts and renewable energy are also crucial to meeting the energy needs of the State of California, and we urge Congress to make energy efficiency, conservation and renewable energy the top priorities for the entire nation, as well.

II. THE ROLE OF STATE GOVERNMENT TO PROTECT THE SAFETY OF ITS CITIZENS

In addition to helping ensure reliable energy supplies at reasonable prices, for more than 80 years, the California Public Utilities Commission has had the responsibility under state law for making sure that intrastate natural gas facilities in California are sited, constructed and operated in a safe manner. The state law in California is very clear that the California Public Utilities Commission has jurisdiction over proposed LNG facilities in California. The California Public Utilities Commission obviously does not have jurisdiction over proposed LNG terminals in federal waters, Baja California, Mexico or other states.

In addition, the California Public Utilities Commission has been certificated by the United States Department of Transportation (DOT), pursuant to the federal Natural Gas Pipeline Safety Act, to inspect all intrastate natural gas facilities within California and to enforce the federal natural gas pipeline safety regulations, including the liquefied natural gas safety regulations promulgated by the DOT. In order to become a certificated state agency, in General Order 112-E, the California Public Utilities Commission adopted the federal safety regulations as part of our own minimum safety standards. The California Public Utilities Commission has numerous safety experts within our Utilities Safety Branch and throughout other parts of our agency, and we receive free training from the DOT.

The California Public Utilities Commission's perspective on these federal safety requirements are consistent with and guided by the Pipeline Safety Act of 1979, in which Congress required that LNG siting safety standards consider factors such as population density, seismic issues, and the need to encourage remote siting. In certificate proceedings, where the California Public Utilities Commission considers siting and safety issues, we require compliance with the requirements under the federal safety regulations.

The California Public Utilities Commission has a much better understanding than the FERC of the unique local conditions involving proposed LNG facilities in California, such as seismic issues. In addition, in the CPUC's certificate proceedings, interested parties, including local entities, will sponsor expert witnesses about the local issues and their safety concerns, and the project sponsor must demonstrate its safety in the hearing process. Through the inclusion of interested parties in the California Public Utilities Commission's public hearings, we are able to thoroughly explore the disputed issues, especially when parties present expert witnesses which disagree with each other. Through cross-examination and responding testimony, all parties have a fair opportunity to establish which evidence is the strongest on the issues, and the resulting decision by the California Public Utilities Commission will be based upon substantial evidence provided in our record.

The process used by the California Public Utilities Commission, which allows parties to participate in evidentiary hearings, helps educate our Commission as well as the general public on the safety issues involved. This also results in much more confidence by the public in the California Public Utilities Commission's conclusions, which will result from the hearing on the safety concerns, compared to a process where disputes of material fact are not set for hearing and interested parties are not provided a meaningful opportunity to participate. People understand that security measures should not be addressed in public sessions. However, there are many parties that believe that the other safety issues should be addressed in a hearing in California, and the California Public Utilities Commission provides them a forum to address these issues.

III. THE FEDERAL/STATE BALANCE IN THE REGULATION OF LNG FACILITIES

Rather than consider legislation for exclusive federal jurisdiction, Congress should consider legislation for concurrent federal/state jurisdiction and not preempt state government. Instead of exclusiveness, Congress should consider inclusiveness. There is a much greater chance of public acceptance of LNG facilities when the state has decisionmaking authority and is included in the process, and when there is meaningful public participation in the process as well, than when the state and the public are excluded. In order to ensure the safety to the general public, the FERC should work together with the state agencies to combine the expertise of both levels of government, like the FERC and CPUC did in the 1970s and the Coast Guard and States Lands Commission in California currently do as they work together concerning proposed LNG projects in federal waters off the coast of Southern California.

Under the Deepwater Ports Act, even though the proposed LNG terminal would be constructed offshore in federal waters beyond the three miles of the state's territorial waters, the Governor of each state is provided a veto right. Therefore, the state has a right as a decisionmaker in the process and has the ability to require necessary conditions for the project to be constructed.

In sharp contrast, if the FERC were to have exclusive jurisdiction under amendments to the Natural Gas Act and could preempt state regulation, there would be the anomalous result that the state has decisionmaking rights for LNG projects proposed for federal waters but has no decisionmaking rights for LNG projects proposed in the state's own waters or on the state's own land. Therefore, even if the scientific evidence were to establish that the LNG terminal in federal waters posed no risk to the safety of the state's citizens, because it is more than three miles offshore, the state still would have a say in the decisionmaking under the Deepwater Ports Act. If the LNG project is proposed in the densely populated area of the state in close proximity to the state's citizens, there is no reason why the state should not also have a say in that decisionmaking process under the Natural Gas Act.

For these reasons, the California Public Utilities Commission recommends that any new legislation or amendments explicitly provide for the states' jurisdiction concurrent with the FERC's jurisdiction. The states' hearing process will also provide more transparency of our work so that the public can become better informed and more fully participate in the process. A better understanding of local communities' concerns allows us to better identify local safety, environmental and public issues and then develop more effective avoidance, protection, and mitigation measures

since our ultimate responsibility is to protect the public, the environment, and our economy. The California Public Utilities Commission is confident that sufficient LNG facilities can be safely located and constructed on the West Coast to meet the market's needs. We therefore respectfully urge that Congress not preempt the states' historic police powers to protect the health and safety of their citizens from any potential hazards from intrastate LNG facilities.

Although I cannot answer questions specific to the merits of safety issues concerning Sound Energy Solutions, because the California Public Utilities Commission maintains that it has jurisdiction to decide these issues and can do so after a hearing, I'd be happy to answer other questions. Again, thank you for inviting me to present the California Public Utilities Commission's views today on this important topic.

Senator ALEXANDER. Thank you very much, Mr. Peevey.
Mr. Giles.

STATEMENT OF THOMAS E. GILES, EXECUTIVE VICE PRESIDENT AND CHIEF EXECUTIVE OFFICER, SOUND ENERGY SOLUTIONS, MITSUBISHI, LONG BEACH, CA

Mr. GILES. Mr. Chairman and members of the subcommittee, Sound Energy Solutions is a subsidiary of Mitsubishi Corporation, and we are developing an LNG receiving terminal at the Port of Long Beach, California. Once completed, this terminal will receive ocean-going tankers carrying liquefied natural gas from a variety of Pacific Rim countries. The bulk of this LNG will be vaporized into natural gas at the terminal and transported to the SoCal Gas system. Some of the LNG will be sold as a liquid for the use in LNG vehicles, replacing diesel fuel and helping to clean up the air quality in the Los Angeles Basin.

The facility will cost approximately \$450 million to construct and have a gross annual capacity of 5 billion tons of LNG. The approval process that we are engaged in involves numerous reviews, permits, and approvals by Federal, State, and local agencies. Barring unexpected delays, we anticipate beginning construction in early 2006.

My testimony today will focus on the regulatory process that we are involved in.

The approval process began for us in June 2003, well before we filed our formal application with FERC in January 2004. The Port of Long Beach acts as the lead agency for the State and is working with FERC to produce a joint EIR/EIS environmental impact statement report document that meets both the requirements of the Federal Government and the CEQA requirements of the State. A draft is expected this spring.

Once the EIS/EIR is finalized, the project will require FERC approval and authorizations from a number of Federal, State, and local agencies. In order for SES to obtain a lease for the property at the port, we must receive regulatory approvals from the California Coastal Commission and from the Port of Long Beach. In short, there is a very long, comprehensive regulatory path that involves FERC, California agencies, the Port of Long Beach, with many opportunities for the public to have their input.

Our efforts to proceed have been undermined by the decision now in litigation before the Ninth Circuit of the California Public Utilities Commission to claim jurisdiction over the Long Beach LNG terminal. If upheld by the court, SES will have to start anew and

to apply to the Commission for a certificate of public convenience and necessity before starting construction of the terminal.

SES is caught in the middle of a jurisdictional dispute. We filed our application with FERC believing that they had exclusive authority to approve the siting, construction, and operation of onshore import terminals. FERC has exercised this authority for over 30 years, and experts in the natural gas legal field told us that FERC was the place we should file. Until this litigation is settled, the regulatory path for our project and for other projects in this country is in limbo.

The uncertainty created by this litigation has also had a dampening effect on LNG project developers elsewhere in the United States. This is because the CPUC has argued that FERC has no jurisdiction over LNG facilities anywhere.

What does exclusive FERC jurisdiction mean to the State and local role in the siting of onshore LNG import terminals? Let me try to explain by describing what it does not mean.

It does not mean that FERC has eminent domain authority. We must receive approvals under California law before we enter into a lease for property of the port. As such, we intend to continue the work with the State and local authorities to do whatever is necessary to obtain the required permits.

It does not mean that California lacks a central role in the siting process. Under the Coastal Zone Management Act, the State must determine that the SES project is consistent with the State's federally approved coastal management plan. FERC cannot authorize a project without this consistency determination.

It does not relieve the project from full compliance with any applicable State or Federal law.

In order to bring this facility into operation in a timely manner, we need regulatory certainty. This jurisdictional dispute with California frustrates our ability to proceed with the project and begin providing important energy and environmental benefits to the State.

The single most important step that Congress can take in this regard is to enact legislation that recognizes the important role that States and local governments play in the approval process, but also confirms that FERC has the primary authority to site liquefied natural gas terminals onshore and in State waters, as well as the facilities that deliver gas from the LNG terminals to the connections with the natural gas pipeline system.

As this committee and the Congress move forward to enact national energy policy legislation, we stand ready to offer our perspective and assistance in any way that we can.

Thank you.

[The prepared statement of Mr. Giles follows:]

PREPARED STATEMENT OF THOMAS E. GILES, EXECUTIVE VICE PRESIDENT & CHIEF EXECUTIVE OFFICER, SOUND ENERGY SOLUTIONS

Mr. Chairman and Members of the Subcommittee: Thank you for the opportunity to appear before you today to discuss the outlook for liquefied natural gas in the United States. Given Sound Energy Solutions (SES) current effort to construct an LNG terminal in the Port of Long Beach in Long Beach, California, I believe that I bring a unique perspective to this debate.

Sound Energy Solutions is a subsidiary of the Mitsubishi Corporation. We are developing an LNG import terminal in the Port of Long Beach. Once completed, the

terminal will receive ocean-going LNG tankers carrying supplies from a variety of sources in the Pacific Rim, store the LNG in double-walled, self-contained tankers, and vaporize it for transportation into an interconnecting pipeline. The gas will be delivered, via this pipeline, to the SoCal Gas system, which will in turn, deliver the gas to customers. A portion of the LNG will not be re-gasified, but sold as liquid fuel for LNG vehicles in the Port and other vehicle fleets in the Los Angeles Basin, which suffers from serious air quality problems. The availability of LNG vehicle fuel will facilitate vehicle conversion from less environmentally friendly fuels such as diesel.

This facility will cost approximately \$450 million to construct, and, when operational, will have a gross annual capacity of 5 billion tons of LNG. The project approval process, which involves numerous reviews, permits, and approvals from federal, state, and local agencies, is underway. Barring unexpected delays, we anticipate beginning construction in early 2006.

Last month, members of the full committee hosted a roundtable discussion on natural gas issues. I have reviewed the testimony of the panelists who participated in the LNG portion of that discussion. It appears that there was consensus from the participants in that proceeding that LNG will play an important role in America's energy future and that Congress should take steps to promote the development of LNG infrastructure to facilitate increased imports. I share those sentiments.

My testimony will focus on the current regulatory process that we are involved in to construct the SES LNG Import Terminal and offer my suggestions as to how Congress can fairly and effectively encourage development of facilities like this.

1. SOUND ENERGY SOLUTIONS PLACES A PREMIUM ON SAFETY AND SECURITY

SES is serious about safety. There are risks inherent in any energy infrastructure project, which cannot be treated lightly. The SES Terminal will be constructed in accordance with the highest engineering standards for built-in security and safety designs, and is designed to anticipate every possible natural or man-made disaster, protect against earthquakes, contain potential spills and reduce terrorism exposures. We are subject to the safety guidelines and reviews of the Federal Energy Regulatory Commission, Department of Transportation, U.S. Coast Guard, California Coastal Commission, California Lands Commission, Port of Long Beach and numerous departments of the City of Long Beach.

SES's parent, Mitsubishi, has been active in world-wide LNG trade for over 40 years, and today supplies over 50% of Japan's natural gas supplies. There are five LNG receiving terminals in Tokyo Bay alone, with eight tankers arriving each week. These deliveries of LNG in this busy, industrial port are vital to Japan's energy security and have taken place without significant incident or interruption since 1969.

2. CURRENT REGULATORY PATH

In June 2003, SES requested FERC to allow SES to pursue its request for authority to site, construct, and operate the LNG import terminal pursuant to the pre-filing process employed by FERC to implement its responsibilities as lead agency National Environmental Policy Act (NEPA) review. In July 2003, FERC granted SES's request and announced that the Port of Long Beach would be the lead agency for review under the California Environmental Quality Act (CEQA), and that the two agencies would produce a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to satisfy the requirements of NEPA and CEQA. Thus, when SES filed its application with FERC for approval of the LNG project under Section 3 of the Natural Gas Act in January 2004, the Environmental Report that accompanied the application was based on the coordination, cooperation, and consultation among the Staff of FERC and the Port of Long Beach, as well as numerous other federal, state, and local agencies that participated in the pre-filing process. A draft EIS/EIR for the project is expected to be released this spring.

Long before the NEPA/CEQA process began, SES began meeting with community leaders and citizen groups to discuss the need for and design of the project. Based on these discussions, a suitable site was located in the Port of Long Beach. Following the filing of the application at FERC, SES has maintained contact with the community and continued its public education and outreach efforts. We have had over 200 meetings with local groups. When the draft EIS is released we will participate in a series of public hearings with the State and Federal agencies involved in permitting the project.

Once the EIS is finalized, we still face a number of regulatory requirements prior to moving forward with the project. In addition to approval from FERC under Section 3 of the Natural Gas Act to site, construct, and operate the LNG terminal, SES will need authorizations from numerous other federal, state, and local agencies. In

particular, for SES to obtain a lease for the property at the port for the site, it must receive regulatory approvals from the California Coastal Commission and the Port of Long Beach. In short, this is a long, comprehensive regulatory path to project completion that involves the FERC, California agencies and the Port of Long Beach, with a multitude of opportunities for public input at all levels.

3. THE NEED FOR REGULATORY CERTAINTY—NOT SHORTCUTS

Our efforts to successfully navigate the State and Federal regulatory process and move forward with the project in a timely manner have been undermined by the decision—now in litigation pending in the U.S. Court of Appeals for the 9th Circuit—of the California Public Utility Commission (CPUC) to assert jurisdiction over the SES LNG Terminal. If upheld by the Court, this would require SES to apply to the CPUC for a Certificate of Public Convenience and Necessity before commencing construction of the terminal.

SES is caught in the middle of this jurisdictional dispute. We filed our application at FERC because we believed that FERC had the authority to approve the siting, construction and operation of onshore LNG import terminals, which includes the SES terminal in Long Beach. FERC has exercised this authority for over 30 years, and a wide body of experts in the natural gas legal field recognizes FERC's authority. Unfortunately, until the current litigation is settled, the regulatory path for the SES project remains uncertain.

The uncertainty created by the assertion of jurisdiction of the CPUC has also had a dampening effect on the interest of project developers to invest in and construct new onshore LNG import terminals elsewhere in the U.S. This is because the CPUC has argued that the FERC has no jurisdiction over LNG facilities whatsoever.

What does primary FERC jurisdiction mean to the state and local role in the siting of onshore LNG import terminals? Let me try to explain it by describing what it does not mean:

- It does not mean that FERC has eminent domain authority. Section 3 of the Natural Gas Act does not confer eminent domain authority to SES. Instead, SES must obtain whatever rights are needed to secure the site of the proposed LNG terminal and the sendout pipeline from the Port of Long Beach. Following NEPA/CEQA review, SES must receive approvals under California law before it may enter into a lease for property at the Port. In our case, eminent domain is not an option. We intend to continue to work with the state and local authorities to do what is necessary to obtain all required permits.
- It does not mean that the State of California lacks a central role in the siting process. Under the Coastal Zone Management Act, for example, the State must determine that the SES project is consistent with the state's federally-approved coastal management plan. FERC cannot authorize a project without such a "consistency" determination.
- It does not relieve the project from full compliance with any applicable state or federal environmental law.
- It does not compromise the joint role that the State plays with FERC in the NEPA process.

4. WHAT CAN CONGRESS DO?

SES hopes to build an LNG import terminal at the Port of Long Beach in order to provide Californians with a steady supply of natural gas and liquid vehicle fuel for the foreseeable future. In order to bring this facility into operation in a timely manner, we need regulatory certainty. The jurisdictional dispute with California frustrates our ability to proceed with the project and delays important energy and environmental benefits that we can provide to California.

SES therefore requests that Congress take action to provide projects like ours with regulatory certainty. Specifically, we ask that you enact legislation that recognizes the important role that states and local governments play in the approval process and confirms FERC's role as the primary authority to site liquefied natural gas terminals onshore and in state waters and the facilities that deliver gas from the LNG terminals to connections with the domestic pipeline network.

As this Committee and the Congress move forward to enact national energy policy legislation, we stand ready to offer our perspective and assistance in any way that we can.

Thank you.

Senator ALEXANDER. Thank you, Mr. Giles.

We have been joined by the chairman of the full committee, Senator Domenici, and by Senator Murkowski. Senator Domenici, we have been operating under the Domenici rule which means that most Senators have not said much in their opening statements, but you are welcome to say whatever you would like.

[Laughter.]

**STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR
FROM NEW MEXICO**

The CHAIRMAN. Well, you note that whenever we have the Domenici rule, the chairman always says something, and I guess I am going to substitute and be chairman right now.

[Laughter.]

The CHAIRMAN. First, I want to thank you for all you are doing in the area of natural gas and for conducting this hearing today as subcommittee chairman. Your commitment has truly added to what we are putting together to make us have a better grasp so we can get a better feel.

We had a natural gas conference, everybody should remember. Some of you made it. It was a very large group of those that have an interest and see problems in that area. One thing that came up was LNG. It kept coming up and it was a very interesting panel on LNG. We talked together and thought that maybe we should get more information about it, and I think that is what we are about here today.

The committee should also know we are moving toward getting a major bill with bipartisan support. We are making some real headway with Senator Bingaman, and we will bring you all, one step at a time, closer to where we are and where we think we will end up and what we will do after that as a committee.

So that brings us to LNG. There is not any question, Mr. Chairman, that chart up there shows that during the next 25 years, there is a big gap. It is going to be filled by something. Our experts that are doing analysis say it is going to be LNG. If it is, it is a huge amount. It may be; it may not be. But clearly, we need to know here as a committee what are the impediments to us moving ahead with LNG and what do people who are involved think about it.

I would hope that, if not today, before we are finished, we will get before this committee the true safety issues. There is always a "we do not want it because" or "do not put it here because." But I think we have to understand how much of the fear is real and how much of it is not, and then we have to proceed to figure out how much of a problem in the future can be satisfied by providing an opportunity for LNG to fill the gap.

So you are providing a very valuable commitment and you will fuel our committee with some very good information about this. I thank you for that.

To the witnesses, thank you. It is not always easy to do what you had to do to come here, and we appreciate it.

Thank you, Mr. Chairman.

Senator ALEXANDER. Thank you, Mr. Chairman. Senator Dorgan and I appreciate the opportunity you have given the subcommittee to be active in this.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. In the interest of time, I will reserve my comments until I have an opportunity to question some of the witnesses, but I appreciate the opportunity.

Senator ALEXANDER. Thank you, Senator Murkowski.

Mr. Grant.

STATEMENT OF RICHARD L. GRANT, PRESIDENT AND CHIEF EXECUTIVE OFFICER, TRACTABEL LNG NORTH AMERICA LLC AND DISTRIGAS OF MASSACHUSETTS LLC

Mr. GRANT. Thank you, Mr. Chairman and members of the committee to inviting me to present testimony. I will summarize the written testimony that I filed.

At the onset, I wanted to note that LNG can be an important part of the answer to the Nation's energy challenges. At the same time, it is not and cannot be a substitute for additional supplies of North American natural gas. Without question, we will be better off if we develop all of the energy supplies available to us.

As part of our group, we have the unusual perspective of being an owner-operator and a developer of LNG facilities, and I would like to digress just for a little bit on the safety side. I know your next panel will hear about the very important issues of safety and security. I want to offer two thoughts about safety.

First, the two recent studies conducted by the Government have been deficient in important ways. Both studies have avoided discussing the probability of a sudden release of a massive amount of LNG. While we all have theories about what might happen in the event of a breach, we need to understand the probability of such breaches. I personally believe it to be quite low, and our impressive safety record, that of the industry—the Senator referred to Japan as an example of that as well—as well as the rigor of the engineering, the shipbuilding and the security processes all tend to confirm that.

Second, we live in a world of comparative risk. At the Everett terminal, we take in about 60 shipments of LNG a year. Next door to us is a gasoline terminal that probably takes in just as many. Across the Nation, there are thousands of such terminals and tank storage farms next to houses, schools, and businesses. We tend to make sure that we are addressing real-world risks in an appropriate and measured way.

On the issue of development, let me switch topics for a moment and address questions about the development of LNG as an important source of energy for the United States. As you know, EIA has indicated that LNG might supply as much as 20 percent of the natural gas consumed in the United States in the future. Additionally, there are dozens of proposed LNG terminals on the drawing board right now. While I think we all agree that not all these facilities will be built and it is unlikely that LNG will supply 20 percent of this Nation's natural gas in the near future, it is safe to say that LNG can provide a growing fraction of the energy needed to power the world's largest economy.

We at Tractabel are confident in the future of LNG in this country. We own and operate the terminal in Everett and have done so for 30 years. And a Tractabel LNG North America subsidiary sells

LNG delivered into the Cove Point and Lake Charles. So we make deliveries in Louisiana and at the other terminals throughout the United States as well.

In addition to all of this, yesterday we announced our intention to build and operate an offshore deepwater port for LNG deliveries off the Boston coast. While the Everett terminal is and will continue to be a crucial facility to meet the demand for natural gas in the region, the reality is that Everett probably cannot expand its throughput much more.

And just as a matter of facts, 20 percent of all the natural gas that comes into the New England area comes through the Everett facility. So it is very important to the region's needs.

Without new means of supplying natural gas to the region, New England could face a supply gap approaching 500 million cubic feet of gas a day before the end of the decade.

The new project will be able to provide an average of 400 million cubic feet of natural gas per day to the New England market, enough to heat 1.5 million homes. The estimated cost for the project, including ships and a connection to the pipeline, is approximately \$900 million.

As you might imagine, we are very excited about the project. At the same time, we are cautiously optimistic about the project's development phase, including formal project application review and regulatory and public consultation and evaluation. Many energy projects throughout the Nation have languished in this stage. We hope that our project, which is excellent for consumers and excellent for the environment, will not.

But let me talk for a moment about these processes. Both the good and the bad about LNG is that it is a global business. This means the product can be and will be transported to places where facilities can be located, permitted, and operated in a sensible way. I think there are several improvements to the process which are reasonable and on which we should be able to agree.

First, I think there needs to be one agency designated as the lead agency for permitting and environmental reviews of a natural gas project. It seems to me the historical tradition of having FERC be the lead agency is wise. Unfortunately, some permitting agencies have chosen not to participate in the FERC NEPA review process and instead to wait until after FERC makes a decision regarding approval of a project before weighing in on the permitting question subject to their authority. Let me offer our experience in Florida as an example.

There we have been working diligently to gain the appropriate regulatory authority to construct a pipeline between the Bahamas and Florida. Last April, FERC approved our EIS, the State made its consistency determination, and the local governments all approved the project, everybody working together. Unfortunately, the Corps of Engineers decided after that to raise questions. The Corps representatives had participated in the interagency meetings and discussions, but they waited until FERC had acted to raise their concerns, some of which included very fundamental elements of the process, including potential pathways, tunneling, et cetera. Now we find ourselves caught between a dramatic design change requested

by the Corps and the design that was approved by more than 10 Federal, State, and local agencies.

I do not think anyone wants to change Federal or State agencies' existing authority over the substantive issues now entrusted to them. I know I do not. I want Federal and State agencies charged with protecting the environment to be aggressive and firm. At the same time, I am pretty sure that most Americans believe that decisions, one way or the other, need to be made in a timely manner.

Thank you again, Mr. Chairman and members of the committee, for inviting me to present our thoughts.

[The prepared statement of Mr. Grant follows:]

PREPARED STATEMENT OF RICHARD L. GRANT, PRESIDENT AND CHIEF EXECUTIVE OFFICER, TRACTABEL LNG NORTH AMERICA LLC AND DISTRIGAS OF MASSACHUSETTS LLC

Thank you Mr. Chairman and members of the Committee for inviting me to present testimony regarding the role of liquefied natural gas (LNG) in the energy marketplace.

Before discussing LNG's place in the market today—and I'd like to emphasize that I view LNG as an important energy source in addition to other North American natural gas supplies, not a substitute for them—I think it might be helpful to put into the record important facts about the technology and fuel itself. These include:

- Liquefaction of natural gas provides us with enormous flexibility because it allows us to store and transport the resource—the energy residing in the natural gas—to places that are not or cannot be fully served by natural gas pipelines.
- Liquefaction allows natural gas to be transported and stored efficiently and economically. It can be re-vaporized and sent to customers via pipeline or remain in liquid form for transport by truck to customers with their own storage tanks.
- Currently there are 113 active LNG facilities in the U.S., including marine terminals, storage facilities, and operations involved in niche markets. Worldwide there are approximately 20 LNG export terminals, 45 LNG import terminals and 175 specially designed LNG ships.

SAFETY

Let me address—and hopefully put to rest—the very important issues of safety and security.

I want to note that LNG is as safe, if not safer, to transport and store than most other fuels. It is not explosive, corrosive, carcinogenic, or toxic. It does not pollute land or water resources. It is not transported or stored under pressure. The Government Accountability Office (GAO) study being conducted at the request of Members of the other body needs to set its foundation on those facts.

Like other fuels, LNG has risks associated with its improper handling; however, LNG has certain characteristics that minimize some of the dangers that may result from mishandling. For example, compared to other fuels, LNG is less likely to ignite in a well-ventilated area.

LNG ships, with their double-hull construction, are among the best built, most sophisticated, and most robust in the world. According to shipping expert *Lloyd's Register*, there has never been a recorded incident of collision, grounding, fire, explosion, or hull failure that has caused a breach to a cargo tank of an LNG ship. In fact, over the last 40 years there have been approximately 33,000 LNG carrier voyages, covering more than 60 million miles without a single major accident or safety problem either in port or on the high seas.

It is also important to note that in the extremely unlikely event that an LNG vessel were involved in an incident that ruptured a cargo tank, and the LNG vapor released met with an ignition source, the likely consequence would be a localized fire, and not an explosion as is often feared.

With respect to the storage of LNG, there has never been a report of any off-site injury to persons or damage to property resulting from an incident at any of the LNG import terminals currently in operation worldwide, including our Distrigas terminal in Everett, Massachusetts. This is due to excellent equipment and facility design, excellent safety procedures employed in the industry, stringent design and safety codes governing design, construction, and operation of storage facilities, and a well trained, highly experienced workforce.

Our company has always had a deep commitment to safety and security, but after September 11th, we developed an even greater commitment, increasing our already substantial investments in personnel, equipment, and varied services. These investments include:

- Private security personnel
- Enhancements to the perimeter of the Everett Terminal
- Municipal police and fire details
- State Police details
- Investment in two high-powered tugboats. These tugs include state-of-the-art fire control equipment to offer unprecedented marine towing and firefighting capabilities to the Port of Boston.
- Development of detailed security plans with deployment based on Homeland Security and USCG threat levels

In short, Tractabel is a pacesetter in public-private partnerships. The LNG carrier *Berge Boston*, which is under a long-term charter to us, is the first vessel in the world to meet the new International Code for the Security of Ships and of Port Facilities certification. Other ships in the company's portfolio have since received that certification. In addition, our work with the U.S. Coast Guard to bring LNG ships into the Port of Boston became the model for the Coast Guard's Operation Safe Commerce Project, a nationwide effort initiated after September 11th to enhance transportation safety and security while facilitating commerce.

I want to offer two final notes about safety. First, the two recent studies conducted by the federal government have been deficient in important ways. Both studies have simply assumed that in the event of an incident a hole of a certain size will appear in one of our ships, without discussing the mechanisms that would be needed to produce such holes or the likelihood of the presence of such mechanisms. While we all have theories about what might happen in the event of a breach, we need to understand the probability of such breaches. I personally believe it to be quite low, and our impressive safety record, as well as the rigor of our engineering, shipbuilding, and security processes all tend to confirm that. In short, I think we need to examine the probability of an incident more thoroughly.

Second, we live in a world of comparative risk. At Everett, we take about 60 shipments of LNG a year. Next door to us is a gasoline terminal that probably takes at least as many. Across the Nation there are thousands of such terminals and storage tank farms next to houses, schools, and businesses. I am not saying that because of this we need to pay less attention to the safety and security of LNG shipments. What I am saying is that we need to make sure that we are addressing real world risks in an appropriate and measured way.

LNG DEVELOPMENT

Let me switch topics for a moment and address questions about the development of LNG as an important source of energy for the United States. As you know, the Energy Information Administration has indicated that LNG might supply as much as 20% of the natural gas consumed in the United States in the future. Additionally, there are dozens of proposed LNG terminals on the drawing board right now. While I think we can all agree that not all of those facilities will be built, and it is unlikely that LNG will supply 20% of this Nation's natural gas anytime in the near future, it is safe to say that LNG can provide a growing fraction of the energy needed to power the world's largest economy.

We at Tractabel are confident in the future of LNG in this country. We own and operate the terminal at Everett, and have interests in the LNG flowing through both Cove Point and Lake Charles. A Tractabel LNG North America subsidiary sells LNG delivered into Cove Point and Lake Charles. We are leaders in the worldwide LNG industry and are involved in the process from liquefaction through transportation right up to the moment the gas is sent into the pipeline.

IMPROVEMENTS TO THE PROCESS

Let me turn for a moment to the regulatory process. I think there are several improvements to the process which are reasonable and on which we all should be able to agree.

First, I think there needs to be one agency designated as the lead agency for permitting and environmental reviews of natural gas projects.

For decades, it has been accepted that FERC is generally the "lead agency" for purposes of environmental reviews required under the National Environmental Policy Act (NEPA) for an interstate pipeline proposed under section 7 of the Natural Gas Act. Under FERC procedures, other federal and state agencies with relevant

permitting responsibilities are solicited to review the proposed pipeline, make suggestions for mitigating environmental impacts, and reach agreement on permitting decisions. The process is inclusive, and under a recent Memorandum of Understanding, relevant federal agencies are encouraged to work together, concurrently and cooperatively, to reach decisions in a timely manner.

Unfortunately, some permitting agencies have chosen not to participate in the FERC NEPA review process, and instead to wait until after FERC makes a decision regarding approval of a project before weighing in on the permitting questions subject to their authority. Since these permits are a necessary requirement for pipeline construction, even projects that have been approved by the FERC can be thwarted by such “last-minute” objections. This allows a single state agency (or the regional office of a federal agency) to block the construction of a federally approved, multi-state pipeline.

Let me offer our experience in Florida as an example. There, we have been working diligently to gain the appropriate regulatory authority to construct a pipeline between the Bahamas and Florida. Last April, FERC approved our EIS, the State gave its determination of consistency with respect to the coastal zone, and the local governments all approved the project. Unfortunately, the Corps of Engineers decided after all that to raise questions. The Corps representatives had participated in all the interagency meetings and discussions, but they waited until FERC had acted to raise their concerns, some of which included very fundamental elements of the process including potential pathways, tunneling, etc. Now, we find ourselves caught between a dramatic design change requested by the Corps of Engineers and the design that was approved by more than ten federal, state, and local agencies through the FERC multi-agency permitting process.

By clarifying what, until recently, was the accepted practice—that FERC is the lead agency for NEPA reviews relating to projects seeking authority pursuant to sections 3 and 7 of the NGA—Congress could send a powerful signal that citizens deserve to have coherent and coordinated environmental decisions.

As part of this, FERC should be given clear authority to establish an administrative schedule for the NEPA review and associated permitting decisions by all of the relevant federal and state authorities. This would ensure a coordinated and comprehensive approach for reviewing proposed projects. It would also avoid the current duplicative reviews, reduce the unnecessary delays that sometimes accompany getting all necessary authorizations to construct such projects, and improve the chances that the government will speak with one voice on important permitting decisions.

I don’t think anyone wants to change federal or state agencies’ existing authority over the substantive issues now entrusted to them. I know I don’t. I want federal and state agencies charged with protecting the environment to be aggressive and firm. At the same time, I am pretty sure that most Americans believe that decisions—one way or the other—need to be made in a timely manner.

CURRENT PROBLEMS

In addition to the very significant issues related to siting new facilities, there are also challenges associated with the regulatory programs of existing facilities. Let me give a few examples that I know about.

FERC has asked the Everett terminal to consider meeting current siting requirements, which cannot be done short of buying much of the land in Island End at a cost of hundreds of millions of dollars, or building some kind of high wall dike around the tanks at a similar cost. Unfortunately, even if done, neither of these would meet current siting regulations. This request is an especially bad idea, one that clearly constitutes regulatory overreach and is viewed by the operating community, investors, and other stakeholders as precisely the sort of agency action that may compromise our ability to meet the Nation’s growing need for energy.

There is a mismatch between the incident reporting guidelines originating from DOT and those included in DOT’s requirements. That means that we currently have to perform dual analysis of everything that might happen. Unfortunately, FERC has taken it to an extreme, asking to be notified of events that are essentially routine maintenance, including breakdown of equipment valued at \$10,000. The dollar threshold on these reports is about the same as our daily maintenance budget.

I want to offer one final thought about the regulatory process. Both the good and the bad thing about LNG is that it is a global business. That means that the product can be (and will be) transported to places where facilities can be located, permitted, and operated in a sensible way.

THE MARKETPLACE

Before I close I want to address the marketplace dynamics very briefly.

During the oil embargoes of the 1970s, entire countries (including the United States), as well as regions within the United States (including New England), discovered the wisdom of diversifying fuel sources. At the same time, gas-rich countries without the need for additional energy resources began thinking about ways to leverage stranded gas reserves. For example, today LNG development is especially important for countries like Trinidad, Angola, and Nigeria. In some of these countries, most of the natural gas that is produced with crude oil is flared because there are few alternatives for usage or disposal of the excess gas.

Our situation now, in which natural gas is priced at \$6.00 in the United States, and at less than \$1.00 in many exporting countries, is similar. Just as the global trade in oil means that price differences are smaller across regions and nations, and therefore prices of oil are less important to a nation's competitiveness, so too will a global trade in natural gas ensure that price differences are minimized. As we continue to use more natural gas, whether from Canada or elsewhere, that should be a benefit to the United States. For example, some of our chemical manufacturers have shifted production to areas with lower natural gas prices, costing perhaps as much as 80,000 jobs in that sector in the last four years. In a world in which natural gas is transported more frequently across national borders, that would not be necessary.

On a related note, some have suggested concern about replaying our experience with OPEC. The advantage of LNG is that much of accessible supply is here in this hemisphere. Rather than worrying, we should be developing that supply. LNG's exceptional and exclusive ability to transport what was once stranded natural gas from places like Trinidad and Venezuela can only help. In short, increased access to global reserves of energy helps us reduce our dependence on any one source.

Thank you again, Mr. Chairman and Members of the Committee for inviting me to present our thoughts on the role of liquefied natural gas in the larger marketplace. I look forward to answering any questions you might have and working with the Committee on these very important issues.

Senator ALEXANDER. Thank you, Mr. Grant.
Mr. Robinson.

STATEMENT OF J. MARK ROBINSON, DIRECTOR, OFFICE OF ENERGY PROJECTS, FEDERAL ENERGY REGULATORY COMMISSION

Mr. ROBINSON. Thank you, Mr. Chairman, Senators. My name is Mark Robinson and I am the Director of the Office of Energy Projects at the Federal Energy Regulatory Commission. We are charged with the responsibility of ensuring the safety and adequacy of about 1,600 hydroelectric projects across the country, authorizing the construction of natural gas pipelines across the country, storage of natural gas as well, and more significantly to this group, the authorization of LNG facilities and their security and safety during their operating life.

I am tempted to rebut a number of statements that have been made about our process, but I would just like to make one statement instead of using my time to do that.

Any criticism that you receive right now on projects that are before the Commission are really criticisms of issues that have not been resolved yet. Until the Commission acts, the only process that we are in is the development of a record that our Commission can look at and make a decision on. So it is a little premature at this point to talk about what the Commission would or would not do or what findings they may make. In fact, the issues that have been raised here today about certain projects are issues that were raised because of our process and made clear to everyone what those issues are and what the possible solutions are. We will continue that process and ultimately our Commission will make decisions

based upon that record, not upon decisions that are made before we have the analysis complete.

Having said that, I would like to move on to what our process is right now in the review and siting of LNG facilities. We have a process that is built on really three areas, and I want to mention each of those. It is how we interact with the local community, how we interact with the States, and how we interact with other Federal agencies. And I will start with the local communities.

When you are dealing with siting—and I have been doing that for a long time—of energy infrastructure, really siting starts as a local process. All siting is local. All decisions concerning siting are local. You have to put it in the perspective of other views, but it boils down to what happens on the ground on that site. So you cannot ignore the local community. In fact, our process is designed with what we call the pre-filing process to seek out the local communities and the people in them and who would be most affected to make sure that we have a record before the Commission that lets our Commission know right down to whose fence is going to be moved or whose tree is going to be cut down. All of those aspects go into our analysis and presentation to the Commission on what the impacts of these projects would be.

We also take advantage of the knowledge and expertise that the local communities have in the areas of safety and security. When we do workshops on safety and security for LNG facilities, we beg, borrow, and steal to make sure that the local entities, the fire and police organizations, are involved in those workshops to let us know what their concerns are and what may need to be done that are specific to their communities, where the hospitals are located, what bridges may be impacted by this facility that would keep someone from getting to a hospital, how we can mitigate for those measures. All of those things are done robustly with the local community.

The State has a somewhat different role. The State provides a level of expertise in some areas that complements what we do at the Commission and is very much appreciated. The State has a role in terms of deciding whether or not a particular project will be constructed through their actions under the Coastal Zone Management Act, the Clean Water Act, and the Clean Air Act. All three of those provisions are dictated by the State and they can conclude in any of those that a project is not appropriate and the project cannot be constructed.

We try to incorporate those agencies through the cooperative agency process, which we have used in the SES project, by the way, with the Port of Long Beach, which is the designated lead agency for the State CEQA responsibilities. To see how we cooperate with the States, we have delayed our EIS on the SES project for 6 months now while the Port of Long Beach does studies that they feel are necessary to complete their State review.

On the Federal level, we deal with other Federal agencies, and I want to divide those into two groups. One group of those agencies that we deal with is on safety, and there we have a very common objective and it works very smoothly with them, the Coast Guard and the Office of Pipeline Safety. We work very, very well with

them because we all have that common goal of ensuring the public safety.

Other agencies we work with have other mandates, everything from ensuring that we have the least aquatic environmentally damaging project to the one that has the least effect on migratory birds. But we incorporate all those and try to make sure that we provide the record and provide the forum to make their decisions at the same time that we have to make ours at the Commission.

Ultimately, all of that is done in a coordinated fashion through administrative process. It works where people want it to work and it does not where people do not. In some instances, people would like to see things held up and they can use that process.

We have made proposals to this committee on how that can be modified with a three-pronged approach to siting that calls for clear jurisdiction, one Federal record, and immediate appeal to the court of appeals upon those actions. I would ask you to consider that in any legislative actions that you may take at the conclusion of these hearings.

Thank you very much.

[The prepared statement of Mr. Robinson follows:]

PREPARED STATEMENT OF J. MARK ROBINSON, DIRECTOR, OFFICE OF ENERGY PROJECTS, FEDERAL ENERGY REGULATORY COMMISSION

Good afternoon. My name is J. Mark Robinson and I'm director of the Office of Energy Projects (OEP) at the Federal Energy Regulatory Commission. I am here as a staff witness and do not speak on behalf of any Commissioner. Our office is responsible for non-federal hydroelectric licensing, administration, and safety; certification of interstate natural gas pipelines and storage facilities; and, more significantly for today's session, authorization and oversight over the construction, operation, and safety of Liquefied Natural Gas (LNG) terminals. Also, we share security responsibilities with the U.S. Coast Guard which has primary responsibility under the Maritime Security Transport Act of 2002.

I want to thank you for this opportunity to speak today and to specifically address the status of LNG terminals, the siting of new terminals, and how we ensure the safety and security of all LNG facilities. I will first address the significance of LNG to our Nation's current and future energy security. Next, I will discuss the comprehensive, inclusive review process through which the Commission, with the assistance of federal, state and local authorities and the general public, reviews applications for LNG facilities, and ensures the safe construction and operation of approved projects. Finally, I will describe some modifications to existing law that I believe are crucial to the Commission's ability to authorize necessary LNG facilities in a timely and efficient manner.

THE IMPORTANCE OF LNG

Natural gas continues to be the economic and environmental fuel of choice in the U.S. This growing trend has created a demand that cannot be met solely by domestic or Canadian production. About 96 percent of the world's proven natural gas reserves are outside of North America. At the same time, the U.S. is consuming about 25 percent of the world's annual natural gas production. With projected decreases in conventional onshore and offshore natural gas production and the projected decline in natural gas imports from Canada through to 2025, growth in U.S. natural gas supplies will depend on non-conventional domestic production, natural gas from Alaska, and imports of LNG. In order for the U.S. to meet its increasing demand for natural gas, LNG must become an increasingly important part of the U.S. energy mix. In fact, the National Petroleum Council's September 2003 report estimates that LNG could increase from less than 2 percent now to as much as 12 percent of the U.S. gas supply by 2025. Some estimates are even higher.

In the Energy Information Administration's (EIA) Annual Energy Outlook 2005 report, total demand for natural gas is projected to increase at an average annual rate of 1.5 percent from 2003 to 2025. EIA estimates that LNG could account for as much as 21 percent of the total U.S. natural gas supply in 2025. This equates to a daily regasification deliverability of about 17.5 Bcf/d.

Currently, there are 16 facilities under FERC jurisdiction in the continental U.S. Twelve of the facilities are land-based, peak-shaving plants that liquefy and store LNG during the summer (low demand) months for sendout during winter (high demand) months. The remainder are baseload LNG import terminals. Recently, there has been a resurgence of interest in expanding existing terminals and in developing new import projects to meet the growing demand for natural gas in the United States.

The current capacity of the four existing LNG facilities (Everett, Massachusetts; Cove Point, Maryland; Elba Island, Georgia; and Lake Charles, Louisiana) totals 3.72 Bcf/d of deliverability. Further, the Commission has approved additional expansions to the Elba Island and Lake Charles LNG facilities totaling 1.34 Bcf/d in deliverability. The Commission has approved three LNG facilities (Cameron, Freeport, and Sabine) located along the Gulf Coast. There are an additional eight applications for LNG facilities filed at the Commission. We are aware of other proposals, some of which are currently in the Pre-Filing Process.

It is clear that additional LNG facilities are needed to help meet U.S. energy demand. As a regulatory agency, the Commission has no authority to develop LNG proposals, but rather can only review those projects that are developed by others. We do our best to conduct the review of LNG applications filed with us in an efficient and inclusive manner, such that projects that the Commission approves are truly those that meet the public interest test. However, as I will discuss below, the current complex legal framework surrounding the consideration of LNG proposals does not encourage, or indeed permit, the rapid, sensible review that I believe our energy needs require.

SITING

FERC's current LNG site review process works to ensure the safety of the public and environmental resources. The siting and oversight of LNG facilities is governed by a comprehensive scheme of federal regulation that guarantees that the FERC and other federal agencies will work with state and local regulators, as well as the general public, to ensure that all public interest considerations are carefully studied and weighed before a facility is permitted, and that public safety and the environment are given high priority. We are proud of our track record of working with states and with all interested stakeholders on these projects, and are committed to continuing to be responsive and responsible regulators. The comprehensive nature of the FERC's LNG program addresses all siting and operational issues with the full participation of the federal and state agencies, and attempt to ensure the timely development of necessary energy infrastructure.

The goal of the FERC's LNG Program is to ensure that projects which are found to be in the public interest are constructed and operate in a safe and secure fashion. As an integral part of this process, FERC staff coordinates closely with other agencies and solicits comments and recommendations at numerous points in the review process from federal, state, and local authorities, and members of the public, in order to obtain the broadest possible range of information and views. This coordination often includes preparing joint environmental documents with the states as we are doing for the Sound Energy Solutions' Long Beach LNG Project in Long Beach, California.

The process of the selection of a suitable site for an LNG import terminal begins with the project sponsor. It involves the consideration of environmental, engineering, economic, markets, safety, and regulatory factors. The basic criteria for any proposed LNG terminal must include:

- deepwater access to accommodate LNG ship traffic;
- The applicant must demonstrate coordination with the local pilot's association, port authority, and the U.S. Coast Guard letter of recommendation process to demonstrate navigation suitability of the channel and tanker.
- proximity to natural gas pipeline systems;
 - site selection near major intrastate or interstate pipelines reduces the length of interconnecting pipeline and has a bearing on site suitability and economics.
- safe engineering and design of the proposed facility;
 - compliance of the plant design with the DOT federal safety standards is essential. FERC's regulations specify filing requirements.
- sufficient land to comply with the exclusion zone requirements.
 - The U.S. Department of Transportation's (DOT) has comprehensive regulations, which in conjunction with National Fire Protection Association 59A LNG Standards, set requirements for exclusion (or safety) zones that must be met by a proposed terminal site. In accordance with Sections 193.2057 and

193.2059, thermal radiation and vapor dispersion exclusion zones are calculated by FERC engineers based on spill scenarios and heat flux levels. These zones minimize the possibility that damaging effects of an LNG pool fire or a flammable vapor mixture extend beyond an LNG plant property boundary.

Alternative sites considered by the applicant as part of the site selection process must also be identified, and the applicant must provide the environmental characteristics of each site, as well as the reasons for rejecting it. Once the applicant decides on a preferred site and files its application, the information is analyzed by the FERC staff and relevant agencies. As a result of the review process, the site may be rejected, reconfigured, moved or expanded. The entirety of the site selection and review process is disclosed to the stakeholders through an environmental review, which typically begins with the pre-filing process and offers multiple opportunities for public input.

THE PRE-FILING PROCESS

Prior to a company's filing an LNG-related application, company representatives commonly meet with the OEP staff to explain the proposal and solicit advice. These meetings provide prospective applicants the opportunity for FERC staff to provide guidance on resolving potential environmental, safety, and design issues, explain the level of design detail and safety analysis required for a complete application, and offer suggestions regarding the application and review process. These meetings also provide FERC staff with opportunity to strongly encourage the applicants to use the formal Pre-Filing Process. The Pre-Filing Process allows the FERC staff to begin the environmental review process 7 to 9 months prior to the filing of an application. This approach stresses the early identification and resolution of issues with the local community, increased federal and state government and public involvement, and the development of consensus.

During this Pre-Filing Process, the FERC staff will engage in interagency consultation, public scoping, identification of alternatives (including, alternate locations) and the collection of site-specific data. With the assistance of the FERC staff, state and other federal agencies, and other stakeholders, the applicant will develop preliminary versions of the required environmental resources reports. The resource reports consider the impact of the project on geological resources; soils and sediments; water resources; vegetation; wildlife and aquatic resources; threatened, endangered and other special status species; land use, recreation, and visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety; and cumulative impacts. These draft documents are filed with the FERC and made available for public review. These reports provide the baseline information necessary to begin preparation of the draft EIS.

For new LNG facilities (and major expansions of existing sites) the EIS will also include a thorough study of potential impacts to public safety. The FERC also develops a separate *Cryogenic Design Review*, for each facility, which includes detailed technical information, as well as conclusions and recommendations regarding a proposed project, to assure the safe design of the proposed facilities and system reliability. Our report, the *Cryogenic Design and Inspection Manual*, summarizes the design, process and equipment proposed at the LNG facility and includes the staff's conclusions and recommendations concerning the proposed project that ultimately appear as conditions in any FERC order approving the project.

The preparation of the draft EIS is a cooperative effort among FERC staff and other federal and state agencies. Typically, cooperating agencies would include the U.S. Coast Guard, the Army Corps of Engineers, the U.S. Fish and Wildlife Service, NOAA Fisheries, and the relevant state agencies responsible for the issuance of permits under the Clean Water Act, Clean Air Act, and Coastal Management Zone Act. However, many other federal and state agencies, non-governmental agencies, and the general public are contacted and consulted throughout the process. As an example, our work on the Long Beach project includes the Port of Long Beach, the California Energy Commission, and the South Coast Air Quality Management District among others.

Although FERC has jurisdiction over proposed LNG import projects, certain permits, approvals, and licenses are the responsibilities of other federal and state agencies. There is nothing unusual about an energy project simultaneously being subject to various regulatory requirements promulgated by different other federal and state authorities. To the extent we can, it is our practice to coordinate our regulatory requirements so that we accommodate those of other authorities. To this end, we hold focused meetings with all relevant federal and state agencies to identify concerns and develop mitigation.

Again, LNG import projects are also subject to the authorities of state agencies that have been delegated authority to act pursuant to federal law, including state agencies that have been delegated duties with respect to the Coastal Zone Management Act, Clean Water Act, and Clean Air Act. Our goal is to work cooperatively with state and local authorities to protect the safety of residents and to minimize adverse environmental impacts. Cooperation among federal, state, and local authorities is needed to assess the project proposals adequately and to expedite access to LNG supplies to meet the nation's critical energy needs. We encourage both federal and state agencies to become Cooperating Agencies in the preparation of the environmental documents.

As I mentioned, the Pre-Filing Process depends on and seeks out stakeholder involvement. Therefore, we must ensure that information needed for meaningful participation is readily available. We require the applicants to provide informational resources to stakeholders by way of newsletters, websites, and focused community meetings. Similarly, we will send a variety of notices to affected stakeholders advising them of how to participate in the FERC process and the progress of the environmental review. This cycle continues through the life of the review process. A successful Pre-Filing Process results in a complete application with the full integration of the issues for all state and federal authorities.

POST-FILING PROCESS

Once scoping is complete and the applicant's resource reports have been revised to reflect the identified issues, the applicant is ready to file its application with the FERC. When the filing is made, interested parties are given another opportunity to become involved in the FERC's proceeding.

After FERC staff reviews the information provided by the applicant, revising it as necessary to thoroughly consider all relevant issues and provide relevant recommendations, the draft EIS is normally issued within 4 months of the filing (if the pre-filing process was successfully completed). The draft EIS is issued for a 45-day review and comment period. We will also hold additional public meetings near the site, both to solicit comments on the draft EIS and to further address any remaining issues.

All of comments on the draft EIS are reviewed. Changes to the document are made as needed, and a final EIS is produced. The final EIS will specifically address all of the comments received during the comment period. Our typical schedule provides for completing the final EIS approximately 4 months after the issuance of the draft.

Through this effort, the FERC staff is committed to producing an EIS that addresses all the issues and provides for mitigation to avoid or reduce impacts. We also strive to develop a record that enables the other federal and state agencies to avoid duplicative reviews. And, we try to provide for efficient decision making by facilitating the issuance of other state and federal permits concurrently with the FERC action rather than sequentially.

Finally, the complete record for the project is presented to the FERC Commissioners for a decision. One further opportunity for public participation is available after the FERC makes its decision—parties to the proceeding may seek rehearing. In total, our process provides at least seven formal opportunities for public input, and almost continuous opportunities for interaction with FERC staff.

POST-AUTHORIZATION MONITORING

After a project receives FERC approval and meets all pre-construction conditions required by the order, the terminal owner is authorized by a separate document to construct.

During the construction period, which typically takes 3 years, the project sponsor is required to file monthly reports summarizing construction activity, the status of any outstanding project permits, an updated project schedule, planned activities for the next reporting period, and details of compliance with environmental conditions. Depending on the phase of construction, OEP staff inspects the project site as frequently as needed throughout the entire construction process. These inspections allow us to ensure that the approved facility design is being followed. In all cases, FERC staff monitors the project at regular intervals between site visits with periodic photo-documentation of the construction. Staff inspections during construction use a checklist to verify compliance with the Commission Order; specific recommendations from the cryogenic design review; equipment fabrication, inspections and testing; instrumentation, hazard detection and hazard control systems; changes in design as the facility progresses from the preliminary to final design phase; envi-

ronmental conditions and mitigation measures; and the facility's site-specific soil erosion and sedimentation control plan.

Prior to the commencement of service by a LNG facility, the project sponsor must again seek written approval from the Commission. Only after complying with all pre-operating conditions listed in the FERC order would a company receive approval to begin operation.

FERC oversight continues after an LNG project goes into operation. Each LNG facility under FERC jurisdiction is required to file semi-annual reports to summarize plant operations, maintenance activity and abnormal events for the previous six months. In addition, our staff periodically conducts inspections (focusing on equipment, operation, safety, and security) of each facility throughout its operational life. About half of the total LNG facilities are inspected every year with special inspections occurring on an as-needed basis. Following the first inspection after the commencement of operations, the facility's inspection manual is updated to incorporate any authorized design changes or facility modifications since the original manual was prepared. This process provides an "as-built" manual for use in future inspections.

The inspection manual provides a permanent record documenting the operating history of the facility and is continually revised to reflect any facility changes and operating problems. The revised document includes FERC staff's conclusions and recommendations from the current inspection and discusses specific operating problems and facility modifications. The company is required to address all recommendations and outstanding issues raised by the FERC.

SAFETY AND SECURITY

Safety and security of the terminal at the proposed site is essential. Every aspect of the staff's engineering and siting review and its coordination with the U.S. DOT and U.S. Coast Guard is geared toward assuring that a facility will operate safely and securely. In recognition of the importance of the LNG industry as part of the nation's energy infrastructure, and the FERC's increased focus on LNG safety and security, we formed a new branch within the Office of Energy Projects devoted to those issues. The LNG Engineering Branch is responsible for managing and enhancing the FERC's existing LNG inspection program and ensuring cooperation with other relevant agencies. This branch performs a number of significant functions including: reviewing the detailed cryogenic design review of proposed LNG terminals; conducting the staff's cryogenic technical conference; calculating the proposal's compliance with DOT's exclusions zones for the site; coordinating the review of marine safety and security issues with the U.S. Coast Guard; and conducting construction and operational inspections. We continually develop the considerable expertise that exists on our staff and to expand our efforts.

While FERC is the lead Federal federal agency under NEPA to analyze the environmental, safety, security and cryogenic design of proposed facilities, two other Federal federal agencies (the Coast Guard, and the Research and Special Programs Administration of DOT) share significantly in the oversight of the safety and security of LNG import terminals. The Coast Guard has authority over the safety and security of LNG vessels and the marine transfer area, as well as the entire LNG facility. The DOT has authority to promulgate and enforce safety regulations and standards for the onshore LNG facilities beginning at the valve immediately before the LNG storage tanks.

In February 2004, the FERC, Coast Guard, and DOT entered into an Interagency Agreement to assure that they will continue to work in a coordinated manner to address the full range of issues regarding safety and security at LNG import terminals, including the terminal facilities and tanker operations, and to maximize the exchange of information related to the safety and security aspects of the LNG facilities and related marine operations. The Interagency Agreement ensures a seamless safety and security review by the three Federal federal agencies from the moment the tankers enter U.S. waters until the vaporized LNG enters the pipeline system.

Overall, the safety record of the industry is commendable. During the approximately 30 years of operating history of the four existing LNG terminals in the continental U.S., there has never been an LNG safety-related incident where LNG was spilled or otherwise mishandled, resulting in adverse effects to the public or the environment. Similarly, no shipping incidents have occurred during the 50 years of operation that resulted in a lost cargo. However, an operational accident occurred in 1979 at the Cove Point LNG facility in Lusby, Maryland, when a pump seal failed, resulting in gas vapors entering an electrical conduit and settling in a confined space. When a worker switched off a circuit breaker, the gas vapors ignited, resulting in heavy damage to the building and a worker fatality. Lessons learned from

this accident resulted in changing the national fire codes, with the participation of the FERC, to ensure that the situation would not occur again. The FERC design review and inspection process contributes to the safety record.

Further, most of you are probably familiar with the explosion that occurred at Sonatrach's Skikda, Algeria LNG liquefaction facility in January 2004. Findings of the accident investigation suggest that a cold hydrocarbon leak occurred and was introduced to the high-pressure steam boiler by the combustion air fan. An explosion developed occurred inside the boiler fire box which subsequently triggered a larger explosion of the hydrocarbon vapors in the immediate vicinity. The resulting fire damaged the adjacent liquefaction process and separation equipment.

After the accident, FERC and DOE engineers inspected the site to gain first-hand knowledge of the situation. There are major differences between the equipment involved in the accident in Algeria and that of LNG facilities in the U.S. High-pressure steam boilers that power refrigerant compressors are not used at any LNG import facility under FERC jurisdiction. However, as a result of the sequence of cascading events at Skikda, we began a technical review of the facility design at each existing and proposed jurisdictional plant to identify whether similar situations are possible and that these areas are adequately equipped with hazard detection and emergency shutdown devices. We are also reviewing the designs of new LNG plants to determine the potential failure modes that may be similar to the events at Skikda. Further, the safety section of each EIS includes a recommendation that a technical review be conducted by the applicant to identify the proximity of combustion/ventilation air intakes to potential hydrocarbon releases, and to ensure that adequate detection and shutdown are provided.

As part of our efforts to enhance the LNG program, the Commission contracted with ABS Consulting for the purpose of providing guidance on modeling methods to be used by FERC staff in the NEPA review of proposed LNG import facilities. The modeling methods we adopted for use as a result of the study were selected to provide a measure of conservatism, meaning they tend to overestimate the consequences from an LNG release. The "ABSG Report" was issued for public review in May 2004, and we made certain changes to the model based on the comments we received.

In December 2004, the DOE issued the Sandia Report which is a comprehensive study of potential spills from LNG tankers. I should reemphasize that no tanker spills have occurred on water like the ones modeled by Sandia. FERC engineering staff provided technical review of various drafts leading to the final report, and it now applies the results in conjunction with the consequence methodology from FERC's ABSG Report to site-specific hazard assessments. The results of the Sandia Report also serve to buttress the staff's hazard modeling used in FERC's LNG authorization process. While the Sandia experts used different methodologies, the hazard ranges in the report are consistent with FERC's conservative assumptions.

Essentially, FERC's model set a foundation upon which to build as we go forward. We will continue to study the science regarding LNG spills and further refine our work in the future. The A site-specific assessment for each LNG import facility is revealed included in our EISs. Our model ensures that we are using standardized methodologies as we perform site-specific analyses of each facility proposed before the Commission. Credible worst-case scenarios, based on the most recent information available, will be included in the NEPA documentation issued by the Commission. Though the spill analysis is a necessary part of our review, our overarching commitment is to ensure that the design and operation of each facility is such that the facility will operate safely. Refining our model is an example of how we are continuously evaluating our review and inspection programs to ensure that the highest levels of safety are maintained.

As part of the detailed cryogenic technical review conducted in connection with the environmental analysis, the staff performs a careful and detailed evaluation of numerous studies and reports that the applicants are required to complete. These include:

- engineering design and safety concepts and the projected operational reliability;
- seismic analyses;
- hazard detection systems;
- fire protection evaluation;
- threat and vulnerability assessments;
- LNG ship transit simulations and channel capacity studies;
- Operation and Maintenance manuals;
- Emergency Response and Evacuation Planning; and
- Security Manual, Transit Operations Manual, and the Emergency Response Manual.

A significant aspect of the FERC's security review is conducted in consultation with the U.S. Coast Guard. Security Assessments of individual terminal proposals are being conducted by several Coast Guard field units through security workshops with Federal, state and local law enforcement and port stakeholders. FERC engineering staff provides technical assistance in the workshops on marine spill issues. The goal is for initial security measures and resource requirements to be identified by the Coast Guard for inclusion in the FEIS.

The Coast Guard and FERC have agreed that future LNG terminal applicants, at the time they begin their Pre-Filing Process, or file the application, whichever comes first, must also submit a *Letter of Intent* (navigational suitability review) under 33 CFR Part 127, and commence a security assessment of their proposal that includes the items required by 33 CFR Part 105 [which implemented the Maritime Transportation Security Act of 2002]. Where specific security concerns are raised, we have conducted a closed-door detailed technical workshop on the site-specific security issue with all relevant stakeholders and federal, state and local expert agencies to explore and resolve the security concerns. Discussions may include facility security plans, and both plant and ship personnel restrictions, limitations and supervision.

RECOMMENDED LEGISLATIVE CHANGES

Notwithstanding the inclusive, thorough nature of the Commission's LNG review process, timely consideration of LNG projects can be made impossible as a result of the complex, inter-related body of law governing the participation of federal and state agencies in the process. For example, state agencies generally have the authority to condition or veto LNG projects under the Clean Water Act, and can also preclude a project by making an inconsistency finding under the Coastal Zone Management Act. Federal agencies may exercise authority under a number of statutes including the Endangered Species Act, and may have their own responsibilities under law including the Clean Water Act. Thus, Commission consideration of the merits of an LNG project is only one of many steps toward obtaining final approval of a proposal. Even if the Commission finds a project to be in the public interest, other agencies may disagree.

In addition to this substantive problem, the procedures by which state and federal agencies exercise their interlocking authorities can be so disparate that, regardless of the merits of a proposed project, conflicting regulatory schedules and attendant delays can operate to seriously hamper or even kill a project. I discuss below a three-pronged approach that I believe would go a long way toward rationalizing the LNG review process. The legislation underlying the FERC's regulations should be amended to allow the following:

Clear Jurisdiction

The Commission has interpreted section 3 of the Natural Gas Act as conferring exclusive jurisdiction on the Commission with respect to the siting, construction, operation, and safety of LNG facilities onshore and in state water (as distinguished from those offshore facilities that are within the Coast Guard's jurisdiction), while recognizing the states' authority to implement other federal laws (such as the Clean Water Act and the Coastal Zone Management Act) that may relate to the approval of LNG projects. There are no legislative, judicial, or administrative statements to the contrary, although the U.S. Court Appeals for the Ninth Circuit is currently considering a challenge by the California Public Utility Commission to the exclusivity of the Commission's authority. It would be extremely helpful if Congress were to confirm the exclusive nature of the Commission's jurisdiction, in order to forestall further debate and judicial review. This would not mean that other Federal and state agencies with permitting responsibilities (e.g., states acting under CZMA, or Clean Water Act—Section 401) would lose authority, but rather would be a recognition of the Commission's paramount role in this area of foreign commerce, and would assist in clarifying that other agencies with roles in the LNG siting process should not seek to expand the nature of their authorities.

One Federal Record

Where many agencies have roles to play, the perception by those agencies that each needs to conduct its own review process under its own schedule and, where necessary, subject to its independent environmental review, can lead to inordinate delay. To avoid this problem, Congress could make clear that the Commission is the lead agency for all environmental reviews required or permitted by federal law regarding FERC-jurisdictional LNG projects, and that federal and state agencies must, in performing their reviews, cooperate with the Commission by following a schedule established by the Commission as lead agency. Failure of an agency to take

any required action within the established time frame would result in the assumed waiver of that agency's authority. This measure would add predictability to the LNG review process, allowing applicants and other stakeholders more certainty as to when they could expect decisions to be rendered. It would also prevent agencies from using delay as a tool for obtaining substantive concessions with respect to a project.

Unified Judicial Review

Under current procedure, Commission decisions on LNG projects may be appealed only to the U.S. Courts of Appeals. However, related decisions by other agencies may be subject to patchwork of review, including reviews within state and federal agencies, review by state courts (as in appeals of Clean Water Act certifications), and by federal courts. This unevenness can not only cause delay, but also raises the possibility of different tribunals reaching conflicting results regarding one project. To avoid these problems, Congress could provide that all appeals regarding agency decisions with respect to an LNG project can be appealed, in one consolidated proceeding, to the U.S. Courts of Appeals, following final action by the Commission.

CONCLUSION

LNG is a crucial and growing part of the nation's energy mix. The FERC's current LNG review process is designed to ensure the safe, reliable construction and operation of LNG facilities, based on extensive input from all affected parties. I believe that the comprehensive and inclusive federal regulation of these facilities, coupled with the FERC's commitment to the public interest and to cooperation with state and local authorities, is sufficient to ensure that the needs of all affected parties are given due consideration. With the legislative changes that I have proposed, the Commission and other interested entities will be able to review and act on LNG proposals in an effective, rational way, so that the United States will be able to build the energy infrastructure that it needs.

Senator ALEXANDER. Thank you very much.

We will follow a 5-minute rule on questions and answers in hopes that we can have more that way.

Mr. Robinson, is it your position that FERC has exclusive jurisdiction over the siting of an LNG terminal or that because of the Coastal Zone Management Act, the Clean Water Act, and the Clean Air Act, a State may veto your decision about locating an LNG terminal?

Mr. ROBINSON. I hesitate to use the term "exclusive jurisdiction" because it implies something that I think is sort of the nut of your concern. Yes, I do believe that we have exclusive jurisdiction and I hope that the Ninth Circuit upholds that. That, however, in no way means that the State does not have their role under other Federal statutes to take whatever action that they want to protect their coastline. They can deny the Coastal Zone Management Act permit, and that denies the ability to construct an LNG terminal.

Senator ALEXANDER. So you are saying that those are separate questions, and you did recommend to our roundtable, if I remember right, that Senator Domenici hosted that you have exclusive authority under section 3 of the Natural Gas Act to site onshore LNG terminals. But what you are saying is even if you had that, California, for example, or Massachusetts or Rhode Island could come along and deny the builder the right to go ahead with a terminal because of the State's decision that the Coastal Zone Management Act, for example, was not complied with. Is that correct?

Mr. ROBINSON. Absolutely. When you have distributed decision-making on the siting process, you end up with no decision. We are trying to make sure that we keep the focus on the Commission as the siting authority. That does not mean that they have exclusive authority to determine whether or not a project will be constructed,

just that everybody plays in one game for the siting process, and that is at FERC.

Senator ALEXANDER. Mayor Cicilline, let me ask you and the case that you are concerned about. Have you been a part of the Coastal Zone Management Act process and the Clean Water Act section 401 water quality certification, the Clean Air Act, which would appear, if the State agreed with you, to deny the company a right to build an LNG terminal?

Mr. CICILLINE. It is my understanding, again with respect to those State provisions, that this particular proposal, the application that was originally filed with DEM in Rhode Island, has been withdrawn and FERC is proceeding under a different provision. But the issues that would be of concern to the local community that I have raised in my testimony remain. That ultimate decisionmaking by FERC with a so-called veto authority by the State does not respond to the scientific concerns we have, the safety concerns that are again raised at the local level.

Senator ALEXANDER. But, Mr. Robinson, that is different than what you just said. Is it not?

Mr. ROBINSON. I do not believe so, sir. I think what he is saying is that even though the State—I think the mayor did recognize the State has authority to veto these projects through those acts. The concerns of the local community that he has expressed are exactly identical to the concerns that we have and are analyzed in our process, which is ongoing and benefits from the local community expressing those concerns to us and pointing out to us where they think we need to do more work.

Senator ALEXANDER. So, Mr. Robinson, would you say that while you would like for FERC to have exclusive authority over the siting of an LNG terminal, that the question of whether there is going to be an LNG terminal in someone's back yard cannot be solely determined by FERC because the Coastal Zone Management Act, the Clean Water Act, and the Clean Air Act give State or local agencies a chance to deny a permit that is a necessary permit?

Mr. ROBINSON. That is absolutely true under existing law and it would be true under the proposal that we have put before this committee to modify that law.

Senator ALEXANDER. So are you saying that in that sense would that mean there is a concurrent decision to be made between State and local officials about whether there ultimately is an LNG terminal at any given place?

Mr. ROBINSON. Well, we are trying to get concurrent decisions made through the proposals that we have made to this body where everybody would have to act in a timeframe set by the Commission, but not concurrent siting decisions.

Senator ALEXANDER. I see.

Now, let me ask in the half-minute I have left, I notice Senator Feinstein was interested—I am interested too—in the offshore siting for LNG terminals. There are 31 active proposals as of December. Mr. Grant, you mentioned an offshore proposal. Can you or others briefly tell us about whether the technology exists for that? Are those logical things to consider, or is this something far out in the future?

Mr. GRANT. Well, it is a timely question since we filed about 8:30 this morning.

[Laughter.]

Mr. GRANT. I think that they serve different purposes. Onshore and offshore terminals serve different purposes. The technology in the offshore is being proved up. I think there are some good avenues. We believe the technology is sufficient to serve the purposes of that offshore terminal. But let me differentiate between what happens in Everett, which is an onshore terminal, and the offshore.

One is when I am in Everett, if we have got gas in the tank, if there is LNG in the tank, I know I have got LNG in the tank to serve my customers. I do not have to worry about berthing out there. The supply is in the market area. At our Everett terminal, we send out between 10,000 and 15,000 truckloads of liquid every year. Offshore terminals are not going to bring liquid into the market, and there are 50 or so LNG tanks in the New England area. The one in Providence is actually an active LNG terminal that we truck to today, and that is how it gets filled and provides gas supply. So you have got secure supply onshore. We tie into different pipelines there. We tie into a power plant next door to us which would not be available offshore. So that is the mode. It is in the market area, a much more reliable supply.

The offshore can be a supplement to those type of things. In tandem with onshore terminals, it can be good. For certain applications it can be good.

Senator ALEXANDER. How far offshore is it?

Mr. GRANT. We are about 10 miles off the coast of Boston. This is not an over-the-horizon type of thing. Obviously, the discussions we have had preliminary with a abutting communities have been we can see your ships and that is a bad thing. So I think whether you are onshore or offshore, there are going to be issues relating to it. But we believe enough in the technology to go forward with the project, but I do not think it provides the same things that an onshore does.

Senator ALEXANDER. Thank you. We can come back to that.

Mr. PEEVEY. Do you want some other comments on that?

Senator ALEXANDER. Well, I would like to but I would like to give Senator Landrieu and Senator Murkowski a chance, so I will ask for more comments when it comes back to me.

Senator Landrieu.

Senator LANDRIEU. Thank you. I appreciate the chairman's line of questioning about the clarification just for the record about what FERC's view is of their authority for siting and the role of local governments, which is very important whether it is a county or whether it is a parish or whether it is a city or whether it is a region. I appreciate the chairman pressing on that issue because whether you are a supporter or an opponent, that is a very important piece of information for us to agree because regardless, I believe we should have at least a clarity of the regulation. And since I am a proponent of the industry, but a proponent hopefully in a balanced approach, to be very for environmental concerns and safety concerns, but also adding supply, this hearing will help us to get to the bottom of that.

Another thing that this hearing will help us get at the bottom of is this question. Just for the record—I am sure people who are experts know this, but I need to be reminded—how many current offshore facilities do we have operating in the world today? Offshore.

Mr. GILES. Zero.

Senator LANDRIEU. Zero. Okay. So we are talking about an experience of several decades, in which my State has participated, of onshore liquefied natural gas. We have a lot of experience whether it is in our own country, in Japan, other places. But we do not have one offshore terminal operating right now.

So when people raise questions, even though my State is most certainly open to the concept—and we actually have some permitting processes underway, moving forward—I think we do have an obligation to see if the technologies that people are speaking to us about, whether it is an open system or closed system, the way the water and the cooling processes work for the technology required to move gas from a gaseous state to a liquid state and back is worth some review whether it is by this committee, who are not environmental experts but obviously represent constituents that have great concerns, as well as industry, that needs some answers so that we can move forward and not just be spending our time in court and wasting a lot of taxpayers' money.

So maybe, Mr. Chairman, if any of the panelists here or in the next panel could talk about how we assure people that these new technologies offshore do not affect our fisheries, coral reefs—I do not know. We have lots of treasures everywhere besides the need to get these things up and running. We do not have many options.

And let me just put on my producer's hat for a minute. They will not let us drill off the coast of Florida for gas that sits right off the coast of Florida, but I have to sit here and listen to the taxpayers in my State and in Alaska pay to run a pipeline from the Bahamas to Florida when you can run a 5-mile pipeline right off the coast of Florida and give Florida the gas it needs. And I have got to sit here and go back to my State and say, by the way, I know everything is expensive, but you also now have to pitch in to run a pipeline from the Bahamas to Florida.

Mr. Chairman, I am going to submit for the record—I know I am supposed to be asking a question.

[Laughter.]

Senator LANDRIEU. But since I am a senior member now of this committee, I am going to submit for the record, just for this record, in order of producing States that produce energy and consume energy—I am going to lay this down again in this record. There are only 11 States that produce more energy than they consume. They are Utah, Colorado, Montana, North Dakota, Oklahoma, Kentucky, New Mexico, Alaska, West Virginia, Louisiana, and Wyoming being the grand prize winner. There are five States that continue to consume mountains of energy, huge amounts of energy, but refuse to produce it any way. No solar, no wind, no oil, no gas, no coal, no nuclear, but expect the rest of us to produce it. And they are California at the top of the list, New York, Florida, Ohio, and Illinois.

Now, let me say before these Senators come call on me this afternoon—

[Laughter.]

Senator LANDRIEU. I know that all of these States have industry and petrochemical corridors and that some of these States also are highly populated States. But this is based on per capita.

The other thing I want to submit for the record is this, Mr. Chairman, is sort of where the permitting is clustered right now. I hope that you can see. You can see my point. It is the same places that are doing all of the drilling and producing and running the pipelines now.

Again, we are not saying this to complain. We are trying to give the country what it needs to be competitive. My industries are suffering the worst. You think I make money just on producing, but my industries are hurting, ammonia, petrochemicals. We need more gas.

But let us get about being clear that we do not have a lot of experience in offshore, get the science we need, clarify our regulations, and then try to do what is the fairest, which is to try to get some regional distribution of this and reward, if you will, or at least compensate or acknowledge, if reward is too strong of a word, the communities that are siting these plants at some manageable risk. Maybe, Mr. Mayor, it is not your community. I am not saying it should be, but at least those that can—more open space, not populations—at least get some compensation.

That will do for my soapbox. Thank you, Mr. Chairman.

[Laughter.]

Senator ALEXANDER. Thank you, Senator Landrieu.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman, and thank you, Senator Landrieu.

I love being part of a discussion with others from producing States that understand what the issues are. I am sitting in a State up north that is chock-a-block full with natural gas and opportunity to bring energy to the rest of the lower 48. And we are trying to figure out now, we are working through the FERC, we are making some headway here on a 3,500-mile pipeline. But we have also got opportunities with LNG. We have been providing a very small amount of LNG to Japan for the past 30 years. But would it not be nice if we could provide some of that to the rest of the United States?

There is a frustration level I think amongst the producing States that we are prepared to help. We want to help. We want to help in a big way in Alaska, but we need somebody to receive it on the other end. And we have got some challenges up north as it might relate to LNG and getting it to the lower 48.

But my questions this afternoon will be to—if we are able to work out the issues, if we are able to provide for LNG to come down through a pipe, as our legislation last year would allow for, is there an opportunity on the receiving end, the west coast end?

So my question is probably directly to you, Mr. Robinson. Are there currently any regasification terminals that are located on the west coast that could accept Alaska LNG?

Mr. ROBINSON. No, ma'am there is not.

Senator MURKOWSKI. So there is nothing in the permitting process. Nobody is talking about it. There is not an opportunity for us if we were able to figure things out on our end.

Mr. ROBINSON. There are applications pending before the Commission that would allow for the construction of terminals on the west coast, and there are a couple of proposals that have not made it to the Commission yet up in Oregon that people are considering as well. But at this point there has not been progress made on those terminals to the point where anyone has broken ground certainly.

Mr. PEEVEY. That is a misstatement I am afraid.

Senator ALEXANDER. Just a minute, Mr. Peevey.

Were you finished, Mr. Robinson or Senator Murkowski?

Mr. ROBINSON. Yes, sir.

Senator MURKOWSKI. Before we go to Mr. Peevey to add his input there, supposing Oregon, to use your example, would say, okay, this is something we want to do. Ball park, how long would it take before we would be in a position to actually be able to deliver LNG?

Mr. ROBINSON. We like to work with an applicant for about 9 months prior to an application being filed to ensure that the local communities and the States are fully integrated into the process. Then once the application is filed, if we have had a successful pre-filing process, we can usually turn it around in about a year. After that authorization, there is usually a period of time where contracts have to be advertised and let, and let us say another year, 18 months to do that, and then a 3-year construction period after that.

Senator MURKOWSKI. So you are talking 5 years?

Mr. ROBINSON. You are looking at probably about a 5-year period.

I should mention one thing. When you asked the question, I thought you were talking about the U.S. west coast. If you are talking about Mexico, there is one project in Mexico by Sempra. I think they have broken ground on the road that would lead to the project, but there has been no facility construction.

Senator MURKOWSKI. Right. And do you know where their gas supply is coming from?

Mr. ROBINSON. Indonesia, BP.

Senator MURKOWSKI. Mr. Peevey, did you want to jump in there?

Mr. PEEVEY. Well, I was just going to point out that there is a project now under construction by Sempra and Shell in Baja California. The California Public Utilities Commission knows about that project. We have already approved an interconnection agreement for that gas to come in at Otay Mesa into California. That is going ahead and we should have gas in the next few years from that project. So it is a mischaracterization to suggest there is nothing going on.

On top of that, BHP Billiton, which is one of the world's biggest energy companies, an Australian company, has proposed an offshore terminal off of California. So is Chevron Texaco talking about an offshore facility off both Baja and off California. So is another company, Crystal Energy of Houston, also talking about offshore California. Those people have faith in the technology.

Now, I am not saying anything one way or another about the SES proposal. That is not the purpose here, but I am saying that these things are moving ahead.

While I have the mike, one final point. Under the Federal Coastal Zone Management Act, the Secretary of Commerce can override a State, and that was not brought out by Mr. Robinson of FERC. What FERC is proposing here is to have all the authority.

We worked carefully with FERC in the 1970's. I asked FERC repeatedly, Mr. Wood and others, to let us do this in a cooperative fashion in California. They spurned all our advances. We told Sound Energy Solutions in October 2003, file an application with the California Public Utilities Commission. They said, forget it, guys. We are going exclusively with FERC. That was their decision. That was not my decision. I would have been happy to process that. They forced our hand to go into court. It was not our choice. We would have been happy to consider this in the normal course of events. We did it in the 1970's. As I said in my statement, we concurrently approved the project, and this time, for whatever reasons, FERC has chosen to go a different route. It is very, very frustrating. There is no comity here.

Senator MURKOWSKI. Mr. Chairman?

Senator ALEXANDER. Senator Murkowski.

Senator MURKOWSKI. I am so focused on energy security for this Nation, and I just have a little difficult time recognizing that we are now going to be getting Indonesian gas going through Mexico to supply California.

Mr. PEEVEY. And Russian gas. We would love to have Alaskan gas—

Senator MURKOWSKI. Why are we going through a foreign country in order to get our gas?

Mr. PEEVEY. We would love to have Alaskan gas under the Jones Act in U.S. ships, U.S. union crews bringing that gas to California. We would love to have an LNG terminal off the coast of California or anywhere in California. We accept the need for LNG. We would love to work with you on that topic.

Senator LANDRIEU. And ships built in Louisiana. Thank you.

Mr. PEEVEY. There you go.

[Laughter.]

Senator MURKOWSKI. We will take those ships from Louisiana. We have no American hulled ships that are hauling LNG in this world.

Senator ALEXANDER. It sounds like another hearing subject.

[Laughter.]

Senator ALEXANDER. Now, I want to do this. I want to give several of you a chance to respond to the question I asked earlier about offshore facilities because some indicated they did, and I want to see if Senator Murkowski or Senator Landrieu have other questions. Do you have other questions?

Senator LANDRIEU. I am good.

Senator ALEXANDER. Did you have anything you wanted to say about that, Mayor?

Mr. CICILLINE. Mr. Chairman, I just want to clarify an answer that I gave to a question you asked about the State rights in terms of siting process. As it relates to the KeySpan proposal in Provi-

dence, the KeySpan permit application to CRMC, our Coastal Resources Management Council, was withdrawn last December after the Congress included report language in a fiscal year 2005 omnibus appropriations bill. And in their letter, KeySpan counsel cited the appropriations language and said it would reapply under the Federal consistency process instead of the normal so-called category B process. So I think when the committee looks at this question of States' rights in the siting process, it is very important to clarify how those rights differ under these two different provisions and limits severely really the States' and local communities' ability to be heard in that process. So I would just ask the committee respectfully to look at that issue as well.

Senator ALEXANDER. Thank you.

Mr. Giles.

Mr. GILES. Yes. With respect to onshore/offshore terminals, as we have said before, there are no offshore terminals. So the first one that happens will be the first one that happens.

Senator ALEXANDER. But there are only four onshore.

Mr. GILES. Yes. In Japan, there are 25. There are five in Tokyo Bay. So it is not a new industry in many ways.

Senator ALEXANDER. There are 25 offshore or onshore in Japan?

Mr. GILES. There are none offshore anywhere in the world.

I have no doubt personally that it can be done and that it can be done safely. But it does not provide all the answers. For instance, in southern California, the worst problem in the area, other than they had a horrible energy crisis, is the air where they have horrible cancer and asthma. Our project is intended to keep part of the product in a liquid form and use it for LNG buses like they have with the LAX shuttle buses and that sort of thing. You cannot get that out of an offshore terminal because all of the product is gasified offshore.

So there are different needs for these terminals in different places, and I think a generic solution to how to fix the LNG situation is going to end up limiting this country's importation of LNG. They need to have site-specific analysis.

Senator ALEXANDER. Mr. Grant.

Mr. GRANT. If I could add just a couple of comments. Again, I was trying to make the distinction there are different uses for onshore and offshore. To my colleague's comment, there are not any offshore right now, but I think the reality is, as you have heard today, it is difficult to permit or expand an onshore facility. The benefits of the two are not the same. One can be a supplement to the other one.

But frankly, from our customers' standpoint, the idea of moving everything offshore creates other safety and security issues. You have got safety and security issues around protecting the ships if they are moored offshore. You have got safety and security issues about if the gas does not get delivered. People not having heat for their homes is as much a safety and security issue as the ship transiting the harbor. So I think all those things come in.

I would agree offshore is not the answer to everything because if it was, frankly all the fuel terminals could get moved offshore and we would have a completely different set of issues. I have not

heard anybody talk about moving all fuel offshore. It tends to just be LNG.

Senator ALEXANDER. We have our vote at 4 o'clock and I want to ask Senators Landrieu and Murkowski, if they have a question, and then we will move to the second panel.

Senator Landrieu?

Senator LANDRIEU. No.

Senator ALEXANDER. Senator Murkowski?

Senator MURKOWSKI. Mr. Chairman, I am actually going to ask two questions on behalf of the chairman, if I may.

The first is for Mr. Robinson. What is your estimate of the LNG projects that have fallen off the planning board due to community opposition, and where were those projects generally located?

Mr. ROBINSON. Oh, my goodness. Well, the ones that come to mind almost immediately are Harpswell, Maine; Mobile Bay, Alabama; and Humboldt Bay, California, which never got off the drawing board because of local opposition to them. There have been other projects that have been discussed with us and have fallen by the wayside, but those three come to mind first.

Senator MURKOWSKI. So really, it is all across the country. It is not necessarily on the west or on the east.

Mr. ROBINSON. No, it is not. A lot of times it has to do with the land acquisition, the specifics of how can a proponent for an LNG terminal acquire the necessary lands to build that project.

Senator MURKOWSKI. Thank you.

And this is a question for Mayor Cicilline. In your testimony, you are critical about relying on existing safety standards or the grandfathering. According to KeySpan's representatives, if FERC were to require KeySpan to bring the Providence facility up to current safety standards, the KeySpan facility, which we understand provides 25 percent of the peak winter requirements in Providence, would have to be taken out of service, shut down completely for two or three heating seasons. If that happened, where would the customers of that facility find alternative gas supply during peak winter periods?

Mr. CICILLINE. Again, the recommendation of the KeySpan proposal and the recognition that they expanded that facility, they ought to upgrade it so that it is safe under current safety standards. We have a facility right now that does not meet current safety standards because of the grandfathering.

The issue of expanding a facility that does not meet safety standards without requiring them to upgrade to meet current safety standards I would suggest respectfully makes no sense. We can argue whether or not grandfathering makes sense, but to allow that facility to be expanded and to increase the safety concerns that have been raised without bringing it up to current safety standards poses a grave danger to the people of Providence.

Ultimately decisions will have to be made to ensure that there is a proper fuel supply.

But mayors have the responsibility every day to deal with the realities of public safety issues that are presented at LNG terminals. We are the ones with the responsibility for police, fire, rescue personnel. And to say to the people of Providence that that facility does not currently meet safety standards and we want to expand

it without an emergency response plan that has been fully developed, without answering the public safety concerns that have been raised through the objections of the fire department and rescue personnel, and it does not meet current safety standards, those are real issues for me as a mayor and for mayors all across this country where siting proposals are made. And I would suggest respectfully to allow, as FERC has suggested, that it can be expanded without meeting current safety standards poses a grave danger to the people of Providence and to all mayors who have the responsibility of ensuring their safety.

Senator MURKOWSKI. And I appreciate the focus on the safety. You do have to attend to that.

I am not convinced that you answered the chairman's question in terms of where do you go if you do have to shut down in order to do these safety upgrades? You then have another public issue on your hands, which is I do not have any gas to heat my home, and it is cold outside. Now what do we do, Mr. Mayor? So we have two fronts that we have got to be prepared for.

Mr. CICILLINE. And I agree. I think certainly that we have to, in an anticipation of a move to upgrade that facility so it meets current safety standards, engage in a very careful planning process to ensure that there is an appropriate level of fuel supply to the city of Providence and its residents. But I do think in the context of a discussion about expanding that facility, that issue must be raised and addressed by FERC and considered by this committee as it looks at legislation.

Senator MURKOWSKI. It is tough.

Thank you, Mr. Chairman.

Senator ALEXANDER. Thank you, Senator.

Mayor, thank you very much, and Mr. Grant, Mr. Robinson, Mr. Giles, Mr. Peevey, some of you have come a long way to testify. We are grateful for your comments. If you have additional thoughts that you did not get to express, if you would like to send them to us within the next few days, we will be glad to make them a part of the record.

I would like to ask the second panel to step up. Mr. Robinson, you can stay where you are, and I will introduce them in about 60 seconds.

I will introduce the second panel now. Captain David Scott is Chief of the Office of Operating and Environmental Standards for the U.S. Coast Guard. If I may say, talk about one of my favorite friends and people, Alex Haley, in honor of Black History Month, who was a proud member of the U.S. Coast Guard. That is where he learned to write. Mr. Bill Kramer, deputy director, New Jersey Division of Fire Safety. Mr. Mike Hightower, distinguished member of the technical staff, Sandia National Laboratories, Albuquerque, New Mexico. And Mr. Mark Robinson, who was with us on the first panel, Director of the Office of Energy Projects for the Federal Energy Regulatory Commission.

The first panel focused on siting, more or less. We got into some other things. This panel is to focus more on safety, so we can understand, as Chairman Domenici said when he was here, what are the real safety issues that we as a Congress and we as a people ought to care about.

I am going to ask Senator Murkowski if she will chair the committee hearing for the next 5 or 10 minutes while I go vote. I will be right back. Why do we not start with Captain Scott.

Senator MURKOWSKI [presiding]. Captain.

STATEMENT OF CAPTAIN DAVID L. SCOTT, CHIEF, OFFICE OF OPERATING AND ENVIRONMENTAL STANDARDS, U.S. COAST GUARD

Captain SCOTT. Thank you, Senator Murkowski. Good to see you again. I enjoyed the little bit of dialogue we had a couple weeks ago at the LNG conference, and I think we can kind of expand upon that a little bit today.

I can tell you I like to write, but I am not in Alex Haley's league.

But let me take a couple of minutes this morning to talk about the Coast Guard's role in LNG vessel safety and security and how we are interacting with some of the other stakeholder agencies in this very important national issue.

LNG vessels have a very good safety record. Today there are approximately 175 LNG vessels operating worldwide, with about 28 of these being regular callers at our import terminals. We ensure LNG vessels calling in the United States meet applicable domestic and international safety standards by a combination of plan review and onsite examination by Coast Guard marine inspectors.

Over the years the Coast Guard has implemented numerous security procedures to address both conventional threats and intentional threats to LNG shipping. By conventional threats, I mean navigation safety risks such as groundings and collisions. To mitigate these conventional threats, we have implemented special vessel traffic control measures for LNG transits, safety zones around the vessel, escorts by Coast Guard patrol craft, and as local conditions warrant, coordination with other Federal, State, and local agencies to reduce public safety risks. The recent Sandia Labs report indicated that these measures had made the risk of an LNG release from groundings and collisions "small and manageable."

Tragically, September 11 brought home the need to address intentional threats as well. Among other things, we now subject LNG vessels to at-sea boardings where Coast Guard personnel conduct special security sweeps and ensure positive control of the vessel is maintained throughout its port transit. In addition, the suite of maritime security regulations developed under the Maritime Transportation Security Act of 2002 and the parallel international scheme, the International Ship and Port Facilities Security Code, require all vessels in international service, including LNG carriers, to implement threat-scalable security plans and assign a qualified individual to serve as the ship's security officer. These security measures came into effect July 1, 2004, and we ensure these vessels are in compliance through our port State control program. And a similar security regime exists for shoreside facilities.

Without a doubt, the issue of constructing new shoreside LNG terminals has been controversial, due in large part to public concerns over the safety and security of LNG vessel operations. While FERC has siting authority for LNG terminals, the Coast Guard plays an important role through our letter of recommendation process. Since the implementation of our February 2004 interagency

agreement with FERC and the Office of Pipeline Safety, we have been working vigorously to ensure that our letter of recommendation process now integrates seamlessly into FERC's environmental impact statement process and also addresses today's concerns about intentional security threats. In particular, we are ensuring that our waterway evaluation includes a risk analysis of the consequences of an LNG release on water, taking into account the hazard distances established by the spill consequence models described in the recently published Sandia report.

In a few weeks, a joint Coast Guard-FERC team will reconvene to refine guidance on conducting security assessments for proposed shoreside LNG terminals. This guidance will be informed by FERC's site-specific modeling, the concentric hazard distances discussed in the Sandia report, as well as current MTSA security regulations, existing Coast Guard guidance on area maritime security plans, and widely accepted risk-based decisionmaking assessment methodologies that have been proven effective, such as the model the Coast Guard used to evaluate the reopening of the Cove Point facility a couple years ago.

One very important product of this assessment will be to identify the resources necessary to ensure the risks of the operation can be managed responsibly. This means providing a deterrent presence sufficient to reduce the possibility of an incident to a level acceptable to Federal, State, and local port stakeholders, as well as ensuring sufficient resources are available to deal with the consequences of an incident in the unlikely event one were to occur. The assessment will identify both current resource levels and the resources necessary to mitigate the risks to the aforementioned level of acceptability. We expect this guidance to be completed and distributed later this spring.

Finally, just a quick word on the LNG deepwater ports. The Coast Guard shares the responsibility for licensing LNG deepwater ports with MARAD. They process information pertaining to the applicant's corporate and financial affairs and actually issue the deepwater port license. The Coast Guard ensures that the environmental impact statement is complete, and we handle all the technical design, fabrication, and operational aspects of the project. Under a memorandum of understanding signed last May, we interact with over a dozen different agencies that have a stakeholder role in LNG deepwater ports.

Currently we are processing nine deepwater port applications. Two have already been licensed, two in the Gulf of Mexico. We expect one to begin operation later this spring, probably March and April, about 100 miles off the coast of the Texas/Louisiana border. And as the gentleman from Tractabel pointed out, we are expecting to get their application to the Coast Guard probably within the next couple weeks.

I look forward to answering a lot of questions, some good dialog on the LNG deepwater ports. I look to get some good questions on that. Thank you, Senator.

[The prepared statement of Captain Scott follows:]

PREPARED STATEMENT OF CAPTAIN DAVID L. SCOTT, CHIEF, OFFICE OF OPERATING AND ENVIRONMENTAL STANDARDS, U.S. COAST GUARD

INTRODUCTION

Good afternoon Mr. Chairman and distinguished members of the Committee. I am Captain Dave Scott, Chief of the Office of Operating and Environmental Standards, U.S. Coast Guard Headquarters. It is my pleasure to appear before you today to discuss the Coast Guard's role in the safety and security of liquefied natural gas (LNG) vessels and facilities and how the Coast Guard is cooperating with other federal agencies on this important national issue.

As the Federal Government's lead agency for maritime homeland security, the Coast Guard plays a major role in ensuring all facets of marine transportation of LNG—including LNG vessels, shoreside terminals, and proposed LNG deepwater ports—are operated safely and that the risks associated with the marine transportation of LNG are managed responsibly. Today, I will briefly review the applicable laws and regulations that provide our authority and the requirements for the safe and secure operation of the vessels, shoreside terminals, and deepwater ports. I will also describe how the Coast Guard is working with the other federal entities here today as fellow stakeholders in LNG safety and security.

LNG VESSEL SAFETY

LNG vessels have had an enviable safety record over the last 40 years. According to a recent Congressional Research Service report,¹ since international commercial LNG shipping began in 1959, tankers have carried over 33,000 LNG shipments without a serious accident at sea or in port. Insurance records and industry sources show that there were approximately 30 LNG tanker safety incidents (e.g. leaks, groundings or collisions) through 2002. Of these incidents, 12 involved small LNG spills which caused some freezing damage, but did not ignite. Two incidents caused small vapor vent fires which were quickly extinguished.

Today, there are approximately 175 LNG vessels operating worldwide.² While there are no longer any U.S. flag LNG vessels, all LNG vessels calling in the United States must meet certain domestic regulations in addition to international requirements. Our domestic regulations for LNG vessels were developed in the 1970s under the authority of the various vessel inspection statutes now codified in title 46, United States Code. Relevant laws providing the genesis for LNG vessel regulation include the Tank Vessel Act (46 U.S.C. 391a) and the Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1978 (33 U.S.C. 1221, *et seq.*). Regulations codified at title 46, Code of Federal Regulations, pt. 154 ("Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gasses") specify requirements for the vessel's design, construction, equipment and operation. Our domestic regulations closely parallel the applicable international requirements, but are more stringent in the following areas: the requirements for enhanced grades of steel for crack arresting purposes in certain areas of the hull, specification of higher allowable stress factors for certain independent type tanks, and prohibiting the use of cargo venting as a means of cargo temperature or pressure control.

All LNG vessels in international service must comply with the major maritime treaties agreed to by the International Maritime Organization (IMO), such as the International Convention for the Safety of Life at Sea, popularly known as the "SOLAS Convention" and the International Convention for the Prevention of Pollution from Ships, popularly known as the "MARPOL Convention." In addition, LNG vessels must comply with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, known as the "IGC Code."

Before being allowed to trade in the United States, operators of foreign flag LNG carriers must submit detailed vessel plans and other information to the Coast Guard's Marine Safety Center (MSC) to establish that the vessels have been constructed to the higher standards required by our domestic regulations. Upon the MSC's satisfactory plan review and on-site verification by Coast Guard marine inspectors, the vessel is issued a Certificate of Compliance. This indicates that it has been found in compliance with applicable design, construction and outfitting requirements.

The Certificate of Compliance is valid for a two-year period, subject to an annual examination by Coast Guard marine inspectors who verify that the vessel remains

¹ CRS Report for Congress: *Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress*, September 9, 2003

² Maritime Business Strategies, LLC; www.coltoncompany.com

in compliance with all applicable requirements. As required by 46 U.S.C. 3714, this annual examination is required of all tank vessels, including LNG carriers.

The Coast Guard has long recognized the unique safety and security challenges posed by transporting millions of gallons of LNG or “cryogenic methane.” Accordingly, LNG vessels typically undergo a much more frequent and rigorous examination process than conventional crude oil or product tankers. LNG vessels are often boarded by marine safety personnel prior to U.S. port entry to verify the proper operation of key navigation safety, fire fighting and cargo control systems.

LNG VESSEL SECURITY

In addition to undergoing a much more rigorous and frequent examination of key operating and safety systems, LNG vessels are subject to additional measures of security. Many of the special security precautions the Coast Guard has established for LNG vessels derived from our analysis of “conventional” navigation safety risks, such as groundings, collisions, propulsion or steering system failures. These precautions pre-dated the September 11, 2001, tragedy and include such things as special vessel traffic control measures that are implemented when an LNG vessel is transiting the port or its approaches, safety zones around the vessel to prevent other vessels from approaching nearby, escorts by Coast Guard patrol craft, and, as local conditions warrant, coordination with other federal, state and local transportation, law enforcement and/or emergency management agencies to reduce the risks to, or minimize the interference from, other port area infrastructure or activities. These activities are conducted under the authority of existing port safety and security statutes, such as the Magnuson Act (50 U.S.C. 191 *et seq.*) and the Ports and Waterways Safety Act, as amended.

Since September 11, 2001, additional security measures have been implemented, including the requirement that all vessels calling in the United States must provide the Coast Guard with a 96-hour advance notice of arrival (increased from 24 hours advance notice pre-9/11). This notice includes information on the vessel's last ports of call, crew identities, and cargo information. The Coast Guard now subjects LNG vessels to at-sea boardings, where Coast Guard personnel conduct special “security sweeps” of the vessel and ensure “positive control” of the vessel is maintained throughout its port transit. This is in addition to the safety oriented boardings previously described.

Of course, one of the most important post-9/11 maritime security developments has been the passage of the Maritime Transportation Security Act of 2002 (MTSA). Under the authority of MTSA, the Coast Guard developed a comprehensive new body of security measures applicable to vessels, marine facilities and maritime personnel. Our domestic maritime security regime is closely aligned with the International Ship and Port Facility Security (ISPS) Code. The ISPS Code, a mandatory requirement of the SOLAS Convention, was adopted at the IMO in December 2002 and came into effect on July 1, 2004. Under the ISPS Code, vessels in international service, including LNG vessels, must have an International Ship Security Certificate (ISSC). To be issued an ISSC by its flag state, the vessel must develop and implement a threat-scalable security plan that, among other things, establishes access control measures, security measures for cargo handling and delivery of ships stores, surveillance and monitoring, security communications, security incident procedures, and training and drill requirements. The plan must also identify a Ship Security Officer who is responsible for ensuring compliance with the ship's security plan. The Coast Guard rigorously enforces this international requirement by evaluating security compliance as part of our ongoing port state control program.

SHORESIDE LNG TERMINAL SAFETY

Presently there are six shoreside LNG terminals in the United States and its territories: the export facility in Kenai, AK and import terminals in Everett, MA; Cove Point, MD; Elba Island, GA; Lake Charles, LA; and Penuelas, PR. Regulations developed under the authority of the Ports and Waterways Safety Act assign the Coast Guard the responsibility for safety issues within the “marine transfer area” of LNG terminals. These regulations are codified at 33 C.F.R. pt. 127. The “marine transfer area” is defined as that part of a waterfront facility between the vessel, or where the vessel moors, and the first shutoff valve on the pipeline immediately before the receiving tanks. The Department of Transportation's Pipeline and Hazardous Materials Safety Agency³ has jurisdiction from that point inland. Safety issues within our purview in the marine transfer area include electrical power systems, lighting, communications, transfer hoses and piping systems, gas detection systems and

³Formerly Research and Special Programs Administration's (RSPA) Office of Pipeline Safety

alarms, firefighting equipment, and operational matters such as approval of the terminal's Operations and Emergency Manuals and personnel training.

SHORESIDE LNG TERMINAL SECURITY

New "Maritime Security Regulations for Facilities" found at 33 C.F.R. pt. 105, were developed under the authority of MTSA. These regulations require the LNG terminal operator to conduct a facility security assessment and develop a threat-scalable security plan that addresses the risks identified in the assessment. Much like the requirements prescribed for vessels, the facility security plan establishes access control measures, security measures for cargo handling and delivery of supplies, surveillance and monitoring, security communications, security incident procedures, and training and drill requirements. The plan must also identify a Facility Security Officer who is responsible for ensuring compliance with the facility security plan. The six existing U.S. LNG terminals were required to submit their security plans to the Coast Guard for review and approval last December, and full implementation of the plan was required by July 1, 2004. These reviews have been completed, and the terminals' compliance with the plans have been verified by local Coast Guard port security personnel through scheduled on-site examinations. In contrast to our safety responsibility, whereby our authority is limited to the "marine transfer area," our authority regarding the security plan can, depending upon the particular layout of the terminal, encompass the entire facility.

SHORESIDE LNG TERMINAL SITING

The issue of constructing new shoreside LNG terminals has been controversial, due in large part to public concerns over the safety and security of LNG vessel operations. The Federal Energy Regulatory Commission (FERC) exercises siting authority for LNG terminals, primarily pursuant to Natural Gas Act authority that the Department of Energy has delegated to FERC. However, the Coast Guard plays an important role in the siting process. As required by 33 C.F.R. 127.007, an owner or operator who intends to build a new LNG facility, or who plans new construction on an existing facility, must submit a "Letter of Intent" to the Coast Guard Captain of the Port (COTP) in whose zone the facility is located. This letter must be submitted no later than 60 days prior to construction and must provide information on: the physical location of the facility; a description of the facility; the characteristics of the vessels intended to visit the facility and the frequency of visits; and charts that show waterway channels and identify commercial, industrial, environmentally sensitive, and residential areas in and adjacent to the waterway to be used by vessels en route to the facility, within 15.5 miles of the facility.

The COTP reviews the information provided by the applicant and makes a determination on the suitability of the waterway for LNG vessels. Factors considered include: density and characteristics of marine traffic in the waterway; locks, bridges, or other man made obstructions in the waterway; the hydrologic features of the waterway (e.g., water depth, channel width, currents and tides); natural hazards, such as reefs and sand bars; and underwater pipelines and cables.

Both the Coast Guard and the FERC recognize that the "Letter of Intent" process, which dates from 1988, does not, in its current form, adequately take into account the security concerns of our post 9/11 environment. First, of course, is the fact that a "60 day prior to construction" deadline to provide information to the local COTP is far too late in the game. FERC will have completed the bulk of its National Environmental Policy Act (NEPA) Environmental Impact Analysis work before the terminal is authorized by the Commission and construction is allowed to commence. Thus, "late-in-the-game" comments by the Coast Guard could be disruptive to an authorized facility. Secondly, and more importantly, the existing regulations are focused primarily with conventional navigation safety risk management issues such as traffic density, hydrologic characteristics of the waterway, etc. They do not focus on port security risk management issues, and in particular, they do not directly require an analysis of the consequences of an LNG spill on water.

To address this problem, on February 10, 2004, the Coast Guard entered into an interagency agreement with FERC and the Pipeline and Hazardous Materials Safety Agency to work together in a coordinated manner to address issues regarding safety and security at waterfront LNG facilities, including terminal facilities and tanker operations, avoid duplication of effort, and to maximize the exchange of relevant information related to the safety and security aspects of LNG facilities and the related maritime concerns.

Pursuant to this interagency agreement, FERC is now requiring terminal applicants to contact the local Coast Guard COTP as soon as they commence their "pre-filing", or submit their conventional application to FERC, and provide the COTP

with the information required by 33 C.F.R. § 127.007. The Coast Guard has agreed to begin evaluating that information upon receipt, and advise FERC of its findings in ample time to include this information as part of the Environmental Impact Statement (EIS). Upon completion of the evaluation, as required by 33 C.F.R. § 127.009, the COTP issues a "Letter of Recommendation" to the owner or operator of the proposed facility, and to the state and local government agencies having jurisdiction, as to the suitability of the waterway for the proposal.

The FERC and Coast Guard are also working cooperatively to address the port security component of the EIS. In addition to an evaluation of conventional navigation safety risks, future EISs will also include a security assessment that takes account of the risks of the marine transportation component of the proposal, using the hazard distances established by the spill consequence models described in the recently published Sandia Report.⁴ A joint USCG-FERC Team is now developing guidance on conducting security assessments for proposed shore side LNG terminals. This guidance will be informed by the FERC's site specific modeling, the concentric "Zones of Risk" hazard distances discussed in the Sandia Report, as well as the current MTSA security regulations in title 33, Code of Federal Regulations, existing Coast Guard guidance on Area Maritime Security Plans, and widely accepted risk based decision making (RBDM) assessment methodologies that have been proven effective, such as the model the Coast Guard used to evaluate the re-opening the Cove Point, MD LNG terminal several years ago. One very important product of this assessment will be to identify the level of Coast Guard, and other federal, state and local resources necessary to ensure the risks of the operation can be managed responsibly. This means providing a deterrent presence sufficient to reduce the risks of an incident to a level acceptable to federal, state and local port stakeholders, as well as ensuring sufficient resources are available to deal with the consequences of an incident, in the unlikely event one were to occur. The assessment will identify both current resource levels and the resources necessary to mitigate the risks to the aforementioned level of acceptability. We expect this guidance to be completed and distributed by early this spring.

The Coast Guard is also working on the changes necessary to bring the existing "Letter of Intent" and "Letter of Recommendation" regulations up to date, specifically by requiring the waterways management information to be submitted to the COTP at the time of FERC "pre-filing" or conventional application, and adding specific requirements for a port security assessment, in addition to the waterways management information, to be presented to the COTP for evaluation.

It is important to note that the Freeport, TX and Sabine Pass, LA Final EISs did include an evaluation of the LNG spill consequence aspects of the projects, using the spill model FERC developed and modified based on a study by ABS Group Consultants.⁵ A security assessment is now being conducted for terminals proposed for Providence, RI (Key Span) and Fall River, MA (Weavers Cove LNG) using the hazard distances established in the Sandia Report, and the Coast Guard's Port and Waterways Safety Assessment risk assessment tool. The results of these assessments will be provided to the Commission for their consideration of these projects.

LNG DEEPWATER PORTS: AUTHORITY AND AGENCY RELATIONSHIPS

The Coast Guard's authority to regulate deepwater ports (DWP) derives from the Deepwater Port Act of 1974 (DWPA) and the regulations pertaining to the licensing, design, equipment and operation of DWPs at 33 C.F.R. pts. 148, 149 and 150. Originally pertaining only to oil, MTSA amended the Deepwater Port Act to include natural gas. This Act allows for the licensing of deepwater ports in the Exclusive Economic Zone along all maritime coasts of the United States. The Secretary of Homeland Security and the Secretary of Transportation delegated the processing of deepwater port applications to the Coast Guard and the Maritime Administration (MARAD), respectively. MARAD is the license issuing authority, while the Coast Guard is the lead on the application review, and has primary jurisdiction over design, equipment and operations. The MTSA amendments to the DWPA established a specific time frame of 330 days from the date of publication of a Federal Register notice of a "complete" application to the date of approval or denial of a deepwater port license. Among other requirements, an applicant for a DWP license must demonstrate consistency with the Coastal Zone Management Plan of the adjacent coastal states.

⁴ *Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water*; Sandia National Labs, SAND2004-6258, December 2004

⁵ *Consequence Assessment Methods for Incidents Involving Releases from Liquefied Natural Gas Carriers*; ABSG Consultants, May 2004

The Coast Guard and MARAD, in cooperation with other federal agencies, must comply with the requirements of the National Environmental Policy Act in processing DWP applications within the timeframes prescribed in the Deepwater Port Act. Currently, the Coast Guard is processing nine DWP applications, including two that have already been licensed: Chevron-Texaco's Port Pelican project and Gulf Gateway Energy Bridge LLC (owned by Excelerate) project, both of which are located offshore of Louisiana. We are anticipating several more applications within the next several months.

To expedite the application review process, and more efficiently coordinate the activities of the numerous stakeholder agencies, the Coast Guard entered into a Memorandum of Understanding (MOU), involving more than a dozen agencies, including FERC, the National Ocean Service, and the Environmental Protection Agency. The MOU obliges the participating agencies to work with each other and with other entities as appropriate, to ensure that timely decisions are made and that the responsibilities of each agency are met. Briefly, these responsibilities include: assessing their particular role in the environmental review of DWP licenses; identifying agency contacts for the proposed project; meeting with prospective applicants and other agency representatives to identify areas of potential concern and to assess the need for and availability of agency resources to address issues related to the proposed project; and identifying environmental issues and concerns related to the proposed project that need to be addressed in order for the lead agency to meet its obligations.

LNG DEEPWATER PORTS SAFETY AND SECURITY

While conventional crude oil DWPs have been in operation around the world for many years, LNG DWPs are an emerging concept; currently there are none in operation anywhere. There are a variety of different designs under development that borrow from designs and technology that have been time-tested in the crude oil and the LNG industries. Proposals include ship-shaped hull designs similar to existing Floating Production, Storage and Offloading units, platform based storage and regasification units, gravity based structures, and innovative docking structures that attach directly to the LNG carrier as it ties off to a single point mooring. Because this is a new concept, the Coast Guard's regulations apply a "design basis" approach, rather than mandate a series of prescriptive requirements. Under a "design basis" approach, each concept is evaluated on its own technical merits, using relevant engineering standards and concepts that have been approved by recognized vessel classification societies and other competent industrial and technical bodies. In addition, the Coast Guard's DWP regulations require that all LNG DWPs develop and implement a security plan that addresses the key security plan elements provided in 33 C.F.R. pt. 106 ("Maritime Security: Outer Continental Shelf Facilities").

Thank you for giving me this opportunity to discuss the Coast Guard's role in LNG safety and security and our relationships with other stakeholder agencies. I will be happy to answer any questions you may have.

Senator MURKOWSKI. Thank you, Captain.

Next we will hear from Mr. Bill Kramer. Welcome.

STATEMENT OF WILLIAM KRAMER, JR., DEPUTY DIRECTOR, NEW JERSEY DIVISION OF FIRE SAFETY, TRENTON, NJ, ON BEHALF OF THE NATIONAL ASSOCIATION OF STATE FIRE MARSHALS

Mr. KRAMER. Good afternoon, Senator. My name is William Kramer, Jr. and I am currently the deputy director of the New Jersey Division of Fire Safety. I also am the chairman of the National Association of State Fire Marshals' Liquefied Natural Gas Subcommittee of our Safety Energy Task Force. I am here today as a representative of the association, which goes by the acronym NASFM.

In the interest of full disclosure, the association receives funding for its LNG-related activities from the Office of Pipeline Safety of the U.S. Department of Transportation. This work is being conducted in partnership with the Southern States Energy Board. The

views I will express today, however, are solely those of the association.

Does LNG pose safety and security risks? Yes.

Are the risks manageable and will public safety officials support LNG projects? It depends.

Each proposed LNG terminal must be evaluated based onsite-specific criteria because each site offers multiple unique risk scenarios, whether it be in California, Louisiana, Massachusetts, or New Jersey.

There are two schools of thought pertaining to risk management. The first is emotional, sensational, confrontational, and traditional. NASFM subscribes to a second more rational school of risk management. It asks three sets of questions.

First, what does the law require? Our safety and security laws define the absolute minimum that must be done. Our position is that they are the starting point and nothing more.

Second, what is needed and what is possible? These are questions that must be answered through the scientific process by qualified, independent experts from industry, government, academia, and nongovernmental organizations. These experts typically look to us for what we are seeing in the real world and what worries us. The combination of science and real-world observations produces some important answers.

The third question ultimately is most important. How much risks is the community willing to accept? When I speak of the community, I mean the people who have a direct and legitimate interest in a proposed project.

The proposed Crown Landing project in New Jersey is planned for a very small community. LNG tankers will travel 70 miles up the Delaware River past many communities in New Jersey and Delaware, as well as a few in Pennsylvania. Many local residents see the enormous economic benefit that will come from the project. But last week the State of Delaware formally opposed the project on environmental grounds. Others have raised several questions including the adequacy of the depth of the channel and the presence of large quantities of chlorine stored not far from the proposed terminal. These questions deserve thoughtful answers.

Communities vehemently objecting to a project can cause it to be withdrawn as fast as it is proposed. When this occurs, resources are wasted, local officials get gun-shy, and we never get to the facts. So because the public depends on emergency responders for advice on these matters, it is crucial that public safety officials have our facts right project by project and that begins with us having a fundamental understanding of the many issues related to LNG safety.

With support from OPS, our association is compiling guidance on LNG safety for use by State and local emergency planners and responders. The purpose of our effort is not to proclaim LNG safe or unsafe. Rather, we are working to help emergency responders understand the risks that LNG poses in their community, prepare them to decide if they can manage those risks, and ultimately assist them in educating others about LNG safety issues.

This program is being pilot-tested in four locations. Let me quickly summarize the basic elements of our project.

Step one is the production of an education document and video outlining LNG safety issues and the development of a comprehensive curriculum for use at the State and local levels. A draft white paper is now under review by technical experts, including experts from DOT, the Department of Homeland Security, National Institute of Standards and Technology, and the Federal Energy Regulatory Commission. The final draft will be shared with NASFM's pipeline safety advisory committees and will be the basis for our project's curriculum.

Step two is a selection of four communities to test the curriculum. We have made the selections and they are Cove Point in Maryland, Freeport in Texas, and Cameron-Hackberry and Trunkline in Louisiana. The Crown Landing project in New Jersey is not a pilot community, but its public safety officials are receiving special assistance from NASFM at my request.

Step three will be to identify and prepare the right local public safety official in the four pilot sites to take the lead on the community projects. This individual will be responsible for understanding the intricacies of LNG safety and communicating this understanding to others in the community. We will equip this individual with training, materials, staff, and technical support. We also will provide this individual with direct access to the most credible experts on LNG and LNG safety.

Step four is the formation of a local steering committee to organize and begin implementing the community projects. With our fire safety officials at the lead, we will form local steering committees that initially will consist of community leaders, experts representing terminal operators, State and local government officials, and others who are knowledgeable about LNG safety.

Step five will be briefing the State and local opinion leaders and decisionmakers. With a solid foundation in place, the local steering committees will be ready to reach out to local elected and appointed public officials, community organizations, the news media, and business and labor leaders.

Senator MURKOWSKI. Mr. Kramer, I am going to ask you to wrap up.

Mr. KRAMER. Once we have tested the program, it will be available to communities where LNG ports are planned.

LNG projects are not inherently good or bad, safe or unsafe. I doubt that emergency responders will support every project and they may strongly oppose some. But please know that our hope is that we can support many of those projects because that will mean that public safety has been served.

Thank you for holding this timely hearing on this most important issue.

Senator MURKOWSKI. Thank you, Mr. Kramer.

Next we have Mr. Mike Hightower.

STATEMENT OF MIKE HIGHTOWER, DISTINGUISHED MEMBER OF THE TECHNICAL STAFF, SANDIA NATIONAL LABORATORIES, ALBUQUERQUE, NM

Mr. HIGHTOWER. Thank you. I am Mike Hightower. I am from Sandia National Laboratories in Albuquerque. I am one of the major authors of the report that we have been talking about and

has been referenced several times today. Thank you for the opportunity to address you today.

As you have heard, increasing LNG capacity is important to U.S. energy security. The Energy Information Administration forecasts that natural gas demand could grow by 35 percent in the next decade, and LNG is forecast to meet much of that new demand. This represents a 10fold increase in LNG imports over 2004 levels.

The question is, how can we transport and handle LNG safely at a growing number of LNG terminals and as the frequency of imports increase? To address this question, the Department of Energy's Office of Fossil Energy requested that Sandia National Laboratories develop guidance that could be used by communities and agencies to improve the safety and security of marine LNG imports.

Many LNG spill studies have already been conducted. Why conduct another study? The purpose of the Sandia study was to fill many of the existing knowledge gaps for maritime transportation and import of LNG. Many previous studies have used simplifying assumptions and modeling to estimate spill hazards, which has led to significant variation in hazard estimates from the different studies. This wide range of results has confused the public and other stakeholders on the overall merits and relative safety and security of LNG imports. Additionally, the events of September 11 have raised public concerns over the security of LNG imports and the consequences of an intentional or terrorist attack against an LNG vessel.

The Sandia study directly addressed these issues, including the impact of accidents and terrorist actions on an LNG vessel and the size and consequences of possible spills. The study, though, does go beyond past consequence analysis and provides guidance on the use of modern risk-based management approaches to minimize threats to public safety from a possible LNG spill.

In summary, this study evaluated credible accidental and intentional threats to LNG tankers, identified appropriate modeling approaches to use for estimating hazards and consequences, assessed the possible hazards and consequences from an LNG spill, including cascading damage, and identified prevention and mitigation strategies that could be implemented to reduce the risk from a large LNG spill over water.

In support of this effort, Sandia consulted with the U.S. Coast Guard, LNG industry and ship management agencies, LNG shipping consultants, and government intelligence agencies to collect information on ship designs, accident and threat scenarios, and LNG safety and risk management operations. For thoroughness, the study results and conclusions were reviewed both by a Federal review panel, including the Coast Guard and FERC, and by an external peer review panel prior to completing the final report.

The study recognizes the proven safety record of the LNG shipping industry and the safety measures already in place by the Coast Guard and concluded that the risks to the public from an accidental spill are small and manageable using current safety management practices.

The study concluded that the risks from an intentional spill, absent aggressive prevention and mitigation strategies, could be

much higher than an accidental spill. However, these risks can be significantly reduced with appropriate security, planning, prevention, and mitigation approaches. The risk management measures needed to improve port and transport security to adequate levels is site-specific and should be identified and implemented in co-operation with appropriate stakeholders, including the Coast Guard and public safety and public officials.

Overall, the study findings are consistent with the results of several of the more detailed maritime LNG spill studies. The safety and risk analysis guidance outlined in the report provides a consistent and uniform approach to identifying, analyzing, and mitigating threats from a possible LNG spill. We hope the guidance provided in the report will become a valuable tool for decision-makers to use in evaluating and reducing the risks of an LNG spill and improving the safety and security of marine LNG transportation.

The results of the study are presented in the Sandia report guidance on risk analysis and safety implications of a large liquefied natural gas spill over water which was released by the DOE on their web site in December 2004. Hard copies of that report are available through Sandia. The written testimony I provided today to the subcommittee is a summary of the executive summary of that report.

Thank you for your time.

Senator ALEXANDER [presiding]. Mr. Robinson.

STATEMENT OF J. MARK ROBINSON, DIRECTOR, OFFICE OF ENERGY PROJECTS, FEDERAL ENERGY REGULATORY COMMISSION

Mr. ROBINSON. Senator, I think I should start by maybe describing a little bit what our office is about and what we do when it comes to safety and security.

We are an office at the Commission that has about 300 engineers and scientists. They range from botanists, to wildlife people, to wetlands, to civil engineers, to cryogenic engineers, to electrical engineers. We pretty much cover the gamut when it comes to the expertise that we have, but they have one thing in common. They all practice their crafts through the prism of energy infrastructure, and specifically here we are talking about through that prism of LNG. They all understand that the No. 1 priority of the Commission, when we are dealing with siting and the maintenance and the security and the long-term oversight of these facilities, that safety is the No. 1 priority of our Commission when it comes to energy infrastructure. And that is ingrained into every person that works at our office.

It goes beyond that. They also understand that when it comes to safety, it is not just the safety of the people that live next door or the people that live downstream, or the ones who are near a gas pipeline that is under high pressure, but also even the safety of the people that work at those facilities. It is not the safety of a large number. It is the safety of one. We have to be able to look at everybody that is involved with one of our projects and say we consider it to be safe. It is a binary system. It is either safe or it is not safe, and that is for 1 person, 100 people, or 100,000 people. And we

have projects that have effects on every one of those numbers that I just mentioned to you, from 1 to 100,000. So it is a common standard that we apply when it comes to ensuring the safety and security of the energy infrastructure that we are charged with overseeing.

I would like to, for just a minute, talk about the record of our LNG facilities. For 30 years, we have had operating plants and we have never had an LNG spill that resulted in any type of consequence at one of these facilities. We have also had about 40 or 50 years of LNG transport around the world and there has never been a lost cargo. So the LNG community has a stellar record, and I think our staff has a very good record of overseeing that safety and security of those facilities.

But it is never enough. We do not stop there. We continuously raise the floor. I have given more than one speech to the industry telling them, complimenting them, you have a wonderful record, and you have spent a lot of money to make sure that your projects are safe, but you are going to spend more because every time we see something that enhances the safety or the security of one of these projects, we are going to require it at all projects where it is applicable. And I will give you an example.

When Skikda, the liquefaction plant in Algeria, had the accident about a year and a half ago, I sent two engineers to Skikda to look at what had happened, to come back and tell us what we could do to enhance project safety here.

Now, the facilities were disparate. They were not the same type of facilities. And it really did not apply, what happened in Skikda, to what would happen here, but we did pick up a couple of things that we have been transferring to our facilities that are sort of underlying aspects of what happened in Skikda but not the major cause. The relationship of a hydrocarbon venting area with an intake area. We now have control mechanisms being put in place on our facilities for incidents like that.

What we learned at Skikda, we learned it and we implemented it all within about a 3-month period. That is one of the benefits of having a Federal safety program in place that recognizes how it can move quickly and make things safer.

Our future efforts are going to involve continuing to do research like the research we did with the consequence analysis and other aspects of safety in applying those lessons learned to the projects that we have currently or projects that would be constructed.

We also have done a number of things within our office to make sure that we are never satisfied with the safety and security of our plants. We have reorganized to put a focus on a group, a branch of people who are engineers who do nothing but study and analyze safety. As an example, this week that group had a group from Japan come in and talk to us for about 3 hours on just safety and security matters at Japanese facilities. They have a very long history and we want to make sure we take advantage of that and we can apply it elsewhere.

One other aspect I want to mention about the benefits of having a Federal safety program, although we do take advantage of State and local interests and concerns and expertise in executing this, is that the industry and the FERC oversight of the industry cannot

be known by the least common denominator. Right now, we ensure a floor under all LNG facilities. If that was disaggregated in some fashion and safety was transferred to other bodies, then that safety floor would be dependent upon each of those bodies and the coordination of that would be much more difficult. There is a critical mass of projects that you need before you can even develop the expertise on safety, and that critical mass is not one project in one State. We need to make sure that, for purposes of safety, we do not compromise, and I think that is exactly what we stand for at the Commission. With the help of the Coast Guard and the Department of Transportation and FERC oversight as well, I think we can ensure that LNG will remain one of the safest forms of energy that this country knows.

Thank you.

Senator ALEXANDER. Thank you, Mr. Robinson. That reminds me of our experience with nuclear power in a way. I was on one of our aircraft carriers. I think each of the 10 of them have two 500-megawatt reactors. I believe that is right. None of them has ever had an incident and all of them are regularly docked in some places where people would not want a nuclear power plant, but they just do not know it is there I guess.

Excuse me for leaving. I was able to vote and get back.

Captain Scott, maybe you covered this while I was gone, maybe you did not. I am interested in the offshore LNG terminals and the technology. Can you describe for me in a little more detail the technology involved in offshore LNG terminals and how different an offshore terminal would be from other deepwater ports?

Captain SCOTT. Sure. As I think a number of the Senators pointed out and a number of the panelists have pointed out, at present there are no LNG deepwater ports currently in operation anywhere in the world.

However, the concept of deepwater ports has existed in many locations. Obviously, in the United States, we have the Louisiana offshore oil port I think since the mid-1970's.

Now, the concept of LNG deepwater ports borrows the technology that has been proven very, very effective in the LNG shipping sphere. For example, many of the proposals use what we call a floating storage and regasification unit concept. That is essentially a ship-like hull that does not have the propulsion components to it but employs the very same storage technology that the 175-odd LNG ships that are operating in the world use. So that technology exists. It just has not been adapted for storage use.

Similarly, with the regasification process, as you know, LNG is transported in its liquid state. It is minus 259 degrees. In order to be able to introduce it into our pipeline transmission system, it has to be warmed up to probably about 45-50 degrees to put it into our pipeline system. So there are a number of technologies that have been used very successfully in land-based applications. That, through certain modifications to make them more viable and a bit more robust to withstand the rigors of the marine environment, salt water vibration, that sort of thing, can be adapted and put into a place in the offshore environment. So it is somewhat misleading to say that we do not have the technology. In fact, we do. We just have to adapt it a little bit.

I will point out that we do expect the first LNG deepwater port operation to come into effect. This will be the accelerated energy project. It is about 110 miles south of the Louisiana-Texas border. That should be coming into operation sometime, I would think, probably around April or so. The type of technology that we have there is what we call a submerged turret loading system. Essentially it is a conventional LNG vessel. It looks like just all the other LNG vessels that are out there. What is unique about it is it has on-board regasification capability and is especially adapted in the bow area that can actually plug into a submerged buoy that is connected to an LNG pipeline that rests on the seabed floor, so it is not a navigation obstruction, and through sophisticated navigation electronic equipment, the ship finds where the buoy is located. It is raised up to the surface and actually mates with the ship, locks in, and then the ship will offload its cargo, warm it up through its regasification process, and then inject directly into the pipeline. That kind of evolution what they are expecting to take about 6 days to offload the cargo—

Senator ALEXANDER. That is like airplanes refueling in the air. Captain SCOTT. I would say, but far less complicated.

[Laughter.]

Senator ALEXANDER. But it is basically an LNG tanker connecting to what looks like another LNG tanker, which has a regasification capacity.

Captain SCOTT. Well, in this submerged turret buoying system, the actual vessel is sort of self-contained. It contains both the LNG storage and the regasification apparatus. The buoy itself rests on the seabed floor. When the ship comes, it floats up to the surface and the ship mates with it. So the buoy itself is probably about the size of this little—

Senator ALEXANDER. Oh, you mean there would be many tankers that would have both capacities. Is that what you are saying?

Captain SCOTT. Well, this is a special design. It is kind of proprietary to this particular company.

Senator ALEXANDER. So it would not be that you would just bring a regular old tanker—

Captain SCOTT. No, no. This is a special purpose tanker.

Senator ALEXANDER. This is a special tanker that would have—

Captain SCOTT. Special for that type of technology.

Senator ALEXANDER. It would have the LNG in it and then when it gets to the buoy, it would be able to warm it up and put it into the pipeline.

Captain SCOTT. Exactly right. I think one of our proposals uses that. It is called a submerged turret loading concept. One proposal right now has that.

We have five proposals that are what we call gravity-based structures. Again, this technology exists up in Alaska for a lot of the offshore, the North Slope stuff. Essentially it is building an artificial island in somewhat shallower water, probably 50- to 100-foot depth water, a large concrete structure that provides the foundation. Essentially what you are doing with the gravity-based structure is putting a shore-based industrial facility on a little artificial island that you have made in the Gulf of Mexico.

Senator ALEXANDER. How far out into the Gulf is it? How many miles?

Captain SCOTT. There are a number of proposals. I think anywhere from about 30 to 50 miles. It depends on the water depth.

Senator ALEXANDER. But even something 30 or 50 miles away is technologically possible.

Captain SCOTT. For the gravity-based structure, the controlling technological issue is water depth, and you really do not want to have water depth—I think they are talking about the maximum water depth for that would be about an 80-foot water depth. So that may control how far offshore you are going to do it.

Senator ALEXANDER. But it is so far out, you would not see that, would you?

Captain SCOTT. Well, certainly we think 30 miles out, you are not going to see it from the shore.

Senator ALEXANDER. And if you did see it, it would just look like another ship, more or less, I guess.

Captain SCOTT. More or less, yes. If you had eyes good enough to see 30 miles out.

[Laughter.]

Senator ALEXANDER. Mr. Robinson, to sort of merge the first panel and the second panel—well, let me ask Mr. Kramer or Mr. Hightower, would either of you want to comment on my question about that?

Mr. HIGHTOWER. No.

Senator ALEXANDER. Mr. Robinson, one of the questions that would seem to be in the way of siting an LNG terminal would be the question of concurrent jurisdiction. That is not really an exact way to put it. A question of whether States and communities have the right to say no to a terminal that they just do not want.

And the other question would be, I guess, partially to reduce the possibility that one might—it is very appealing at first thought to say that this terminal is going to be 50 miles off-coast. You will not see it. Even if you did, it would not look much like anything different.

From your point of view, if you have 31 applications—or you did in December—why would working with State and local governments in a concurrent way to locate terminals offshore not be the easiest solution? Are there some flaws with that approach?

Mr. ROBINSON. I would not say flaws, but I think you go back to there has never been an offshore facility constructed and operating.

There are really two types of offshore technologies that we are talking about. The one that may come into operation in April is the submerged turret design. That has the difficulty associated with it that it does not have any storage associated. It is just gas straight into the system.

One of the benefits of an LNG terminal that is provided to the gas delivery system is that it does allow for the storage of LNG on-shore in tanks for delivery over a week period of time, let us say, after the tanker is long gone. Tanker movement is dictated by a number of things, including weather, and if you are relying upon gas delivery, then you may want to contemplate having that stor-

age in a place where you can wait for the tanker to show up the next time.

So those two technologies. One of them has that storage aspect associated with it that does not really allow it to substitute for on-shore facilities. The other with the gravity-based structures, those are massive structures. You probably have never been to the FERC building at 888 North Capitol, but those gravity structures are sometimes about the size of that building, large concrete structures, that have to be constructed in near-shore areas.

There are impacts associated with offshore facilities that the captain knows much better than I do that do not make them a slam dunk. It is fine for somebody onshore to say, well, let us just put them offshore because it is sort of an amorphous type of a concept. Let us just get them offshore and they will be away from us.

But again, it goes back to all siting is local, and once you get to the actual facility and you try to site it, that is when the problems start to come up. There are no sites that everybody just says are fine. As the Senator from Louisiana was alluding to, there are concerns with offshore facilities in terms of the vaporization process and the effects it would have on the fishery resources of the Gulf of Mexico. Every project has concerns associated with it. I think Captain Scott and I both feel that pain equally.

Senator ALEXANDER. Mr. Hightower, would you walk us through a worst case intentional spill scenario, what the size of the hole would be, what the leak would be like, what the hazard zone would be like, what it might look like? Some have said an LNG incident would be like a bomb explosion. Is that true?

Mr. HIGHTOWER. It is very difficult to take a worst case because as soon as you take a case, someone will say, you know, I can make a case that is worse than that and they will do that. If I say, okay, we can damage one tank in an LNG ship, someone will say I will figure out a way to damage two. So if we start talking about worst case, we can get down a very slippery slope in a hurry.

But I think maybe to get to the gist of your question, what may be possible and could be possible—and I think we have to look at those. If you look at the threats that we are looking at through the intelligence communities, we believe that the size of the potential damage that you might see under a number of different scenarios range from 2 to 3 square meters, a meter or 2 in diameter, up to 3 to 4 meters in diameter. That is the hole sizes that we are looking at.

It is possible, depending upon the types of threats that you would be looking at, that you might have what we term cascading damage, more than one tank damaged at a time. I cannot get into the types of threats that would provide that. That is classified. We have a classified report to go along with our unclassified report.

But we believe that in general, spills of two or three tanks at a time probably, what you might consider worst case, even though I do not want to use that term, would be potentially possible or possible. Our report does take those types of range of events, whether they are intentional or accidental, and tries to provide some information in a general format as to where we think the consequences and the hazard distances are for that.

Those can be modified by improving your risk management approaches, by having additional safety, by having additional security, by working with the Coast Guard, how you site your facility, your environmental conditions at the site. All of those things need to be taken into consideration. We believe that there is a range of possibilities that you need to look at and we have looked at that in our report.

Does that answer your question?

Senator ALEXANDER. Yes. That is a big help.

I just have a couple more questions. I want to, while I have got Mr. Robinson here, make sure I understand this jurisdictional question. Would you tell us how the jurisdictional changes to section 3 of the Natural Gas Act that you have recommended would compare with the other authority that FERC currently has for siting pipeline infrastructure?

Mr. ROBINSON. It would essentially make it equivalent. We currently have—and there is no one that is questioning our authority to site interstate natural gas pipelines. We would ask that the same authority be expressed under section 3.

Senator ALEXANDER. And you have also asked for the right of eminent domain under section 3 for LNG terminal siting. Is that correct?

Mr. ROBINSON. That is correct.

Senator ALEXANDER. Now, you had said earlier that while you felt that FERC ought to have exclusive siting, that there were other issues that came up, for example, with the Coastal Zone Management Act, the Clean Water Act, the Clean Air Act that permitted the State to make a decision that, for reasons under those acts, it did not want an LNG terminal and that that would stop the location of the terminal. Did I understand you correctly?

Mr. ROBINSON. Yes, sir, you did.

Senator ALEXANDER. Now, someone said, though, that the Coastal Zone Management Act decision by a State could be overridden by the Department of Commerce. Is that true?

Mr. ROBINSON. Yes, it is. If the State denies a CZMA, it can be appealed to the Department of Commerce and the Secretary of Commerce can overturn that if it meets certain criteria. Some of those criteria include in the national interest, things of that sort.

Senator ALEXANDER. Has that ever happened?

Mr. ROBINSON. We have two pipeline projects where they went to the Secretary of Commerce—I will confuse the two, but I think it was Millennium and Islander East. In one instance, the Secretary of Commerce upheld the State; in the other instance, the Secretary of Commerce overturned the State.

Senator ALEXANDER. So it would be fair to say that under the Coastal Zone Management Act, in the end the State does not have the clear authority to stop an LNG terminal because that might be overruled by an agency of the Federal Government.

Mr. ROBINSON. With a very high standard for the Secretary of Commerce to meet.

Senator ALEXANDER. But that still leaves the Clean Water Act and the Clean Air Act.

Mr. ROBINSON. That is correct.

Senator ALEXANDER. If the State determines that there is no State water quality certificate under—I guess this is its delegated authority under the Federal Clean Water Act.

Mr. ROBINSON. That is correct.

Senator ALEXANDER. The State has been delegated the authority to make decisions about clean water, and if the State of California, for example, refused to issue a State water quality certification in connection with an LNG terminal, would that stop it even though you had approved it?

Mr. ROBINSON. There is no administrative review at the Federal level of the 401 denial. You can take that to the State court and appeal it to the State court, and the State court could overturn it just like the Federal court could overturn the decision of the Secretary of Commerce on the overturning of the denial of the CZMA. So you always get to the courts somehow.

Senator ALEXANDER. But that is a State issue.

Mr. ROBINSON. But it is a State issue.

Senator ALEXANDER. That is not a Federal agency overturning a State decision.

Mr. ROBINSON. It is a State issue.

Senator ALEXANDER. And on the Clean Air Act, does the same apply?

Mr. ROBINSON. Same thing as the 401.

Senator ALEXANDER. Well, I want to thank each of you for taking time to be with us today. This is a very important hearing, and it is one which the Senate takes very seriously.

I will end where we started. We are here today discussing liquefied natural gas because the price of natural gas in the United States is higher than in any other industrial country in the world. And while there are a variety of policy approaches we can take to try to lower the price, that range from conservation and alternative sources of energy, one of the most obvious ways to increase the supply and one of the most immediate ways to increase the supply is liquefied natural gas. And siting and safety of terminals for LNG is the key to that.

So you have helped us a great deal. We will make this a part of our record as we work on an energy bill, and I thank you for coming. The hearing is adjourned.

[Whereupon, at 4:36 p.m., the hearing was adjourned.]

APPENDIX

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

CITY OF WARWICK, RI,
Warwick, RI, February 11, 2005.

Hon. LAMAR ALEXANDER,
*Chairman, Subcommittee on Energy, Committee on Energy and Natural Resources,
U.S. Senate, Washington, DC.*

DEAR SENATOR ALEXANDER: I would like to thank you for allowing the City of Warwick the opportunity to enter into the record its comments regarding the proposed siting of the KeySpan Liquid Natural Gas (LNG) marine terminal in Providence, Rhode Island. I appreciate the opportunity to add, on behalf of the City of Warwick's nearly 90,000 residents, my administration's strong and adamant opposition to this proposal. I join many of Rhode Island's leaders, Save the Bay and numerous others who have expressed firm opposition to this proposal based on public safety and economic concerns.

PUBLIC SAFETY

The City of Warwick is a community that enjoys 39 miles of coastline along Narragansett Bay and the Providence River and is characterized by high-density residential neighborhoods. It is my belief that construction and/or operation of an LNG terminal would unnecessarily endanger our residents and could potentially decimate the quality of life that Rhode Islanders have long enjoyed. I am very concerned about the safety and security risks associated with the presence of LNG tankers transiting Warwick's highly populated coastal neighborhoods. The City of Warwick is not willing to support the expansion of such a dangerous industrial enterprise in a neighboring community since this enterprise will jeopardize the public health, safety and welfare of our residents.

As you are aware, the Federal Energy Regulatory Commission (FERC) concluded (May 2004) that a leak from an LNG tanker could catch fire and endanger people up to nearly a mile away; additional studies have shown that fire from LNG will burn hotter and faster than oil or gasoline, and the fire cannot be extinguished until all of the fuel is consumed. Other LNG scientists indicate that the loss of an entire tanker could produce a fire a mile wide and result in second-degree burns two miles away. Should an accident occur along Warwick's densely populated coastline, the resulting vapor cloud or pool fire could potentially cause extensive, catastrophic damage to life and property.

A Sandia National Laboratories and Department of Energy Report found that a terrorist attack on a tanker could, in theory, cause a thermal blast that would cause major injuries and buildings to catch fire more than a third of a mile away, and cause second-degree burns on exposed skin for up to a mile. The report also concluded that foam insulation used on many LNG tankers would likely decompose under the searing heat from a fire, which "could lead to rupture or collapse" of adjacent tanks, leading to more intense fires of longer duration.

Additionally, studies have also shown that spilled LNG would disperse faster on the water than on land, because water spills provide very limited opportunity for containment. LNG vaporizes more quickly on water since the ocean provides an enormous heat source. Accordingly, most analysts conclude that the risks associated with shipping, loading, and off-loading LNG are much greater than those associated with land-based storage facilities. Therefore, Warwick would be one of several communities to be considered in the highest risk category during the transit of a fully laden LNG tanker.

The City is also very concerned with the potential for a terrorist attack, and potential shipping-related events that could result in LNG spills, such as collisions, groundings, navigational errors, and mechanical failures. Navigation of these tank-

ers is very difficult in confined waterways and these types of accidents are a very real possibility. In addition, according to Senator Jack Reed (D-RI), the Coast Guard "does not have the resources to adequately secure LNG tankers." Without proper resources the risk factor of transiting tankers increases to an even greater level.

Land-based events that could result in an LNG spill include equipment failure and site-specific events such as earthquakes. Terrorist attacks against LNG ships or storage tanks could release a large amount of LNG at once. According to Gal Luft, director of the *Institute for the Analysis of Global Security* in Washington, locating LNG terminals in close proximity to residential or urban areas results in them becoming a major terrorist target—not just the terminals, but the whole LNG infrastructure, from tanker, to the terminal, to the truck.

The preponderance of evidence clearly illustrates that there are numerous public safety risks associated with the transportation of liquid natural gas. To expand such a facility in a highly populated, urban area and risk exposing tens of thousands of residents to the dangers of an explosion constitutes a potentially tragic and preventable hazard.

ECONOMY

The security buffer that would likely be required could have a substantial negative impact on the commercial and recreational resources of Greenwich Bay and all of the city's waterways. The Energy Information Administration estimates that demand for LNG will nearly double over the next two decades. Increased demand will undoubtedly lead to an ever-increasing number of ships transiting our waterways, exponentially affecting our safety, economy and enjoyment of our natural resources. From a purely economical standpoint, closure of Greenwich Bay and the waters from Warwick Point north to Conimicut will have a significant disruptive and adverse impact on the local recreational and commercial shellfishing industry. Greenwich Bay alone is home to over 4,000 recreational boats and also contains a commercial shellfishing fleet that would be devastated by additional closures due to transiting LNG tankers. Accidental groundings, navigational errors and mechanical failures would also greatly exacerbate the potentially adverse impact on the local economy. The negative socioeconomic impacts stemming from LNG ship deliveries will constitute a significant degradation of Warwick's public and natural resources.

FIRST RESPONDER AND TRANSIT COSTS

In addition to the potential environmental and safety concerns, Warwick and other coastal communities would be in a danger zone and would have emergency "first responder" obligations without being provided a source of funding for necessary training and equipment. Warwick would undoubtedly incur direct "transit-related costs" each time a tanker passes by its waters. Transiting LNG tankers will place a heavy burden on our local Law Enforcement, Fire and Harbormaster Departments. There is no indication that these city departments will be provided training, equipment and financial resources for any of these costs. There is also no indication as to what public safety and security impacts are associated with such a disaster. Transiting LNG tankers will place an undue economic burden on the City of Warwick's financial resources.

It is my firm belief that LNG facilities should be located in offshore terminals or in remote areas where they pose no threat to population centers. For all of these reasons, the City of Warwick is hereby on the record as being adamantly opposed to the proposed KeySpan marine terminal for Providence, RI. Approval of this proposal would jeopardize the lives and properties of tens of thousands of Rhode Islanders.

Once again, thank you for the opportunity to provide testimony on this very important matter. Sincerely,

Sincerely,

SCOTT AVEDISIAN,
Mayor.

STATEMENT OF PATRICK C. LYNCH,
ATTORNEY GENERAL OF THE STATE OF RHODE ISLAND

Q: Please state your name and business address for the record.

A: My name is Patrick C. Lynch and my address is 150 South Main Street, Providence, Rhode Island 02903.

Q: In what capacity are you testifying?

A: As the Attorney General of Rhode Island, on behalf of the more than one million citizens that I was elected to represent and defend.

Q: What is the purpose of your testimony?

A: My testimony is intended to focus on the inadequacies of the current LNG terminal licensing process that is vested in the Federal Energy Regulatory Commission pursuant to the Natural Gas Act.

Q: Do you have any opening remarks at this time?

A: Yes I do. First, I am grateful for this committee taking the time to closely examine the environmental and public safety threats associated with the proposals to have LNG supertankers ply the precious coastal waterways of Rhode Island and Massachusetts, which are situated along some of the most densely populated areas in the United States.

I am also compelled to state that the composition of the panels that will field questions by the Subcommittee members is clearly unbalanced in that it heavily favors industry, as well as some of the very federal agencies that have thus far demonstrated that they have not been able to discharge their duties in a manner that will adequately protect the safety of citizens of densely populated cities and communities. These citizens will be forced to live in close proximity to either the LNG terminal or LNG supertanker operations proposed for Fall River, Massachusetts, and Providence, Rhode Island. Although my office made a number of attempts to be given the chance to participate on the panels before you, and were denied that chance, I appreciate this moment to share my serious concerns about the way in which our Federal Government determines where to site LNG terminals.

Q: Please explain why LNG terminal siting issues are important to Rhode Island.

A: As I mentioned a moment ago, there are currently two proposals for LNG terminals in the southeastern New England area that will significantly and detrimentally affect the interests of Rhode Island citizens. One is the proposal by Weaver's Cove Energy and Hess Amerada to establish a LNG terminal in Fall River, and the second is a proposal by KeySpan Corporation to convert an existing 30-year-old storage tank in Providence into a terminal capable of receiving marine shipments of LNG.

Q: Please explain how these proposals affect Rhode Island.

A: Both LNG terminals, if licensed by FERC, would necessitate LNG supertankers traveling many miles through narrow waterways in order to reach their respective destination points in Fall River, Massachusetts, and Providence, Rhode Island.

Much of the coastal waterway comprises Narragansett Bay, which is Rhode Island's greatest natural and recreational resource. Narragansett Bay is one of the few estuaries in the country that remains relatively free of heavy industry. The Bay and its tributaries support not only a significant commercial fishing industry, but also form the backbone of Rhode Island's multi-billion-dollar tourism industry.

For the Fall River terminal, LNG supertankers would have to navigate up the narrow "East Passage" of Narragansett Bay and then through the Mount Hope Bay, 60 percent of which is in Rhode Island territory. The navigation route to Fall River requires the LNG supertankers to travel under four separate bridges, two of which are in Rhode Island—the Newport/Pell Bridge and the Mount Hope Bridge. The total trip is approximately 26 miles from the entrance of Narragansett Bay to the proposed terminal location in Fall River.

LNG supertankers destined for the Providence terminal would travel up the narrow East Passage of Narragansett Bay before entering the Providence River in order to reach the Port of Providence. The length of trip from the entrance of Narragansett Bay to the Port of Providence is approximately 29 miles.

This past Thursday—February 10, 2005—a 350-foot tanker ran aground in Newport, at the opening of Narragansett Bay, which is where these gargantuan, 900-foot-long LNG supertankers are also expected to travel. It stands as the latest of many groundings that have occurred over the years, and will continue to occur in the future, because of the difficult, site-specific conditions that exist along the navigation route. This recent grounding highlights the fact that the narrow federal channel along East Passage of Narragansett Bay is the wrong place to supertankers, which are as long as three football fields and carrying an extremely dangerous and volatile product.

I can not emphasize enough that all along the navigation routes whether to Fall River or Providence, there are many densely populated communities that clearly fall with the deadly thermal radiation zones that would emanate from a LNG pool fire. These affected communities include the cities of Providence, East Providence, Fall River, Warwick, and Cranston; and the towns of Bristol, Barrington, Tiverton, Warren, Middletown, Portsmouth, Newport, and Jamestown.

Last, both proposals stand to substantially interfere with the recreational uses of Narragansett Bay, disrupt other commercial operations and industries, and obstruct the multi-billion-dollar urban revitalization efforts that are unfolding along the shores of Providence and East Providence (see attached graphic depicting planned development in areas adjacent to the KeySpan site).

Q: Have you evaluated the environmental and socioeconomic impacts stemming from the proposals to establish marine terminals in both Fall River and Providence?

A: Yes. As a formal intervenor in both licensing cases, I have attempted to guide the FERC environmental staff to conduct an environmental assessment of both projects that will comply with the legal mandate of the National Environmental Policy Act (NEPA). Specifically, I have strongly argued that any environmental assessment must address in detail the following issues:

(1) the impact of safety and security protocols that will be established by the United States Coast Guard for LNG supertanker operations;

(2) the impact on commercial and recreational resources along Narragansett and Mount Hope Bays, as well as the Port of Providence;

(3) the long-overdue need for the development of marine exclusions zones as it pertains to LNG supertanker operations along densely populated coastal communities;

(4) the need for truthful consideration of the risks stemming from an accidental or intentional release of LNG from a marine carrier;

(5) the need for consideration of the consequences of an accidental or deliberate release of LNG from a supertanker as it relates to public safety impacts;

(6) the economic impact of the yet-to-be-announced security protocols that the Coast Guard will establish, with specific detail on site conditions, available intelligence, threat assessments, as well as the scope and nature of safety and security operations;

(7) the consideration and analysis of the impacts to public safety and property that exist within the dangerous thermal radiation zones under any credible scenario described in the recently released study by the Sandia National Laboratory;

(8) the consideration and analysis of the impacts to public safety and property that would occur in the event of delayed ignition of LNG vapor clouds; and

(9) a real alternatives analysis that includes the economic impacts of each of the above considerations.

Q: Have you included any documents that demonstrate the importance of considering the above issues as part of the environmental impact analysis?

A: Yes. Included within the attachments are graphics that depict thermal radiation zones where Rhode Islanders risk being injured or killed in the event of an accident or intentional act. Around the proposed KeySpan facility, we have produced an image that shows a number of schools, universities, hospitals (including the state's primary trauma center), chlorine manufacturing facilities, and other critical energy infrastructure that would be damaged or destroyed in the event of a catastrophic breach of the LNG supertanker's contents.

Focusing solely on the KeySpan proposal, the consequences of an intentional release of LNG from a supertanker as a result of an act of terrorism are extraordinary. Furthermore, as articulated in the report by Dr. Jerry Havens, a nationally respected expert on thermal radiation zones and the consequences of LNG releases, there is great cause for concern stemming from the proposals to introduce vast quantities of LNG into population centers when the means of transportation is by marine carrier.

Q: How has the Federal Energy Regulatory Commission reacted to the concerns you have raised?

A: FERC has simply ignored these most important issues. My office has painstakingly tried to get FERC to adequately analyze the public safety implications of introducing LNG supertankers into Rhode Island's waterways, but FERC steadfastly characterizes the risks as "manageable" and "acceptable" without any substantive analysis or explanation. Without even conducting an independent threat analysis, FERC simply chooses to rely on the past safety record of the LNG marine carrier industry without any apparent concern about the real threat posed by terrorism in the United States, particularly in the post 9/11 world.

Q: What evidence have you seen about the potential for an act of terrorism on a LNG supertanker?

A: There are a number of developments that cause me concern as the State's chief law enforcement official. First, the threat of Al Qaeda terrorists is real, and it remains unclear how long it will continue. Clearly, we have already witnessed the use of aircraft as weapons of mass destruction. Certainly, a saboteur or terrorist, if able to access any type of aircraft laden with explosives, could use the aircraft to attack

an LNG supertanker. Such an attack would likely cause the horrific consequences described in the Sandia Report.

From a threat standpoint, it has recently been identified that Al Qaeda members have established contact with violent gangs in this country, including a gang called "MS-13." This gang has a presence in the Boston area. Moreover, there are also radical groups that have recently attacked critical energy infrastructure, such as the recent detonation of explosives at the base of 540 kV Hydro-Quebec transmission structure in Canada along the border with the United States. The group, called the *Initiative de Resistance Internationaliste*, claimed responsibility and specifically cited Iraq and the Israeli/Palestinian conflict as causes for the attack. Although, surprisingly, there has been little or no mention of this event in the American media, I believe that all of these threats should lead our nation to do what Congress envisioned when it passed the Homeland Security Act—to secure the homeland. Because FERC has failed to adequately analyze these threats and, unfortunately, seems ill equipped and uninterested in doing the task, the citizens of Rhode Island and nearby Massachusetts need intervention at the highest possible level—the United States Congress.

I believe that the Draft Environmental Impact Statements for both the Fall River and Providence terminals make it clear that the most important environmental issue raised in the proceedings (the threat of terrorism and the public safety consequences) has been glossed over in the most superficial manner.

Q: What steps have you taken as a result of FERC's failure to adequately address the threat issue?

A: My office has retained Richard Clarke, the nation's foremost expert on counter-terrorism, to conduct an independent threat analysis. Although we asked FERC to extend the deadline for comments on the DEIS in the KeySpan case to allow us to submit the completed threat analysis, FERC rejected our request, and I note that it did so despite KeySpan having raised no objection. In my experience, FERC's failure to grant a highly interested party additional time, even when the applicant itself raised no objection, further demonstrates that FERC intends to rush to judgment and approve KeySpan's project and, in the process, trample the sovereign rights of Rhode Islanders.

Q: What other actions have you taken in order to see that the public interest is adequately protected?

A: In addition to the many letters that I or my staff have written regarding these matters, I have also submitted a joint petition with Massachusetts Attorney General Tom Reilly requesting the United States Department of Transportation to promulgate regulations that comply with the spirit and letter of the Pipeline Safety Act of 1979. This law specifically encourages the remote siting of LNG terminals. Additionally, I have submitted comments supporting the promulgation of exclusion zones for LNG marine carriers so that protections are finally available to citizens who live along the navigation routes of LNG supertankers. All of these actions are documented in the attached packet of materials that I strongly encourage Committee members to examine.

Q: Do you have any closing comments?

A: I ask the Subcommittee on Energy to diligently investigate and seek measures that resolve the inadequacies of the current FERC licensing process. I encourage the Subcommittee to ensure that the energy needs of New England are satisfied through the remote siting of LNG terminals so that the health and safety of our citizens are not unnecessarily jeopardized. Last, and again, I extend my appreciation to the Subcommittee for taking the time to consider my testimony and the attached materials.

Q: Does this conclude your testimony?

A: Yes.

[Note: The following attachments to Mr. Lynch's statement have been retained in subcommittee files:]

- Correspondence from Attorney General Patrick C. Lynch to the USCG regarding Marine Exclusion Regulations;
- Joint Petition of the Rhode Island and Massachusetts Attorneys General for rulemaking by USDOT;
- Correspondence from Attorney General Patrick C. Lynch to Senator Domenici;
- Graphic image showing areas within thermal radiation and vapor dispersion of LNG in the event of a deliberate attack on LNG supertankers along the navigation route up Narragansett Bay;
- Graphic image showing Consequence Assessment of Intentional Breach of LNG supertankers while vessel is berthed at the KeySpan facility in Providence, Rhode Island;

- Graphic image showing ongoing revitalization efforts along the waterfronts of Providence and East Providence, Rhode Island;
- Graphic image showing thermal radiation zones that would exist for an Offshore LNG Terminal in federal waters off the coast of Massachusetts;
- Correspondence from Attorney General Patrick C. Lynch to the Honorable Patrick Henry Wood, III, Federal Energy Regulatory Commission;
- Two-Part Report prepared by Dr. Jerry Havens containing an Analysis of the DEIS for the KeySpan LNG Facility Upgrade Project and Recommendations for Requirement of Exclusion Zones to Protect the Public from Marine Releases of LNG;
- Comments of Attorney General Patrick C. Lynch on the Draft Environmental Impact Statement for the Proposed KeySpan Liquefied Natural Gas (LNG) facility Upgrade Project in Providence, Rhode Island.

CITY OF FALL RIVER, MA,
Fall River, MA, February 25, 2005.

Hon. PETE V. DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington,
DC.

DEAR SENATOR DOMENICI: I would like to thank you for this opportunity to submit comments to your committee as it relates to the hearing that was held on February 15, 2005 on siting issues for LNG import terminals. I would like to offer a few ideas, which could make the current process less contentious:

1) *Funding for companies that develop offshore terminals:* The government should offer financial incentives to those energy companies that agree to develop offshore LNG import terminals. It could be argued that the monetary costs related to safety and security measures that federal, state and local authorities have to bear as it relates to the transport of LNG via tanker ship are less when it comes to offshore facilities. Quite simply, onshore terminals and the safeguarding of such can cost more, the difference or the savings in safety and security costs for offshore terminals should be passed on to those companies that pursue the development of such facilities.

2) *The necessity of developing a comprehensive needs analysis:* The appropriate time for FERC to conduct a comprehensive needs analysis of supply/demand issues has long passed. It should have been done already. Undoubtedly, studies have been done or the issue has been examined in some way by FERC or other entities, but I am unaware of any comprehensive study and planning process having been done on this issue. The Department of Energy Commissioned Sandia National Laboratory to do a comprehensive study of issues relating to the transport of LNG via tanker ships and I would suggest that another governmental agency, perhaps FERC, should Commission an entity to do a comprehensive needs analysis. How much LNG does the United States actually need? Also, when do we have too much LNG, assuming we can reach such a point? It is a legitimate question. The U.S. if often criticized for having an overly heavy reliance on foreign governments for our oil supply. LNG is also shipped to the United States from foreign producers of this substance. In my opinion, we do not want to create a situation where we depend heavily on foreign governments for our gas, similar to the situation that exists now with oil. A comprehensive U.S. energy policy should include a mix of clean coal, oil, gas, and maybe even nuclear power in addition to enhanced or greater efforts to conserve and a focus on renewable energy like solar and wind power. We should also begin to think about other alternatives that we may not have focused in on previously. I note that President Bush in several past speeches has discussed the potential for hydrogen to be a fuel of the future.

(There are 4 existing LNG import terminals in the continental United States. Another 7 have been approved by FERC thus far and another 3 by the Coast Guard/MARAD for a total of 10 new terminals having been approved. Another 13 LNG import terminal applications have been formally filed with FERC as of 2/18/05 and an additional 6 proposals have been filed with the Coast Guard/MARAD for a total of 19 pending applications. Also, various project sponsors throughout the United States have identified at least 14 potential sites for LNG import terminals. Canadian and Mexican officials have also either approved sites or project sponsors have made proposals to the appropriate governmental agency in those countries. Therefore, we find at least another 12 proposals that may move forward in either Canada or Mexico, some or all of which through existing or proposed pipeline infrastructure could service the U.S. East and West coasts or locations in between.)

3) *The appropriate placement of LNG import terminals:* I am not comfortable that the U.S. has an effective energy policy in place as of right now but certainly as a community confronting the issue of LNG import terminal siting, I can tell you that a main focus for me is LNG as it applies to that potential energy policy. My sentiments above, about the necessity of having a comprehensive needs analysis done, I hope, will not fall on deaf ears. I believe that LNG should be a component of U.S. energy policy, but we need to know exactly how much of a factor it should play, because it is vitally important to the next question that I will raise, the question of where to place these LNG import terminals. The LNG industry paints the portrait of an extremely dire situation; they say that we need LNG import terminals so bad and so quickly that they should be allowed to place them in any location imaginable. This is a difficult concept for many citizens, including myself, to buy into. Many feel, as I do, that the ideal location for LNG import terminals should be offshore or in very remote locations. While I understand that the industry will argue that LNG accidents either through mechanical failure, human error or terrorist attack are low-probability events, reports like the Sandia report should leave no doubt in anyone's mind; If such a situation were to occur it would be a high consequence event. Thus we are left to balance the concept of low probability vs. high consequence. This is a balancing act that seems to be a very daunting one, especially post 9/11. Although, as Americans, we believe strongly that we should not live in fear, to do so would be to allow those terrorizing our country to enjoy a certain amount of victory. Those that would harm us should be denied that opportunity. However, we do have a responsibility to act smarter than we have in the past. I believe that it is the duty of all those responsible for homeland security and the protection and preservation of our homeland to mitigate future threats. So, we have to ask ourselves, does it make sense to place LNG import terminals in heavily populated areas, residential neighborhoods or urban settings? I don't believe it does. Not if alternatives exist. Alternatives include siting LNG import terminals in remote onshore locations or through the use of technology, placing them offshore. If it turns out that offshore technology or siting onshore terminals in remote locations costs more in terms of slightly higher gas prices, I believe it is a cost that American citizens will find reasonable.

Also, I do not believe that such costs would be as high as some say or if siting these terminals in such locations will even bring about higher costs. I say this because every time an LNG tanker visits a current or future import terminal there are or will be tremendous safety and security costs that local, state and federal governments will have to pay. Those funds are going to have to come from the U.S. taxpayer. I believe that costs for safety and security are less or would be less when we begin to talk about siting these terminals offshore or in remote onshore locations. As I said in bullet #1 if this committee, or you, Senator Domenici, are already planning to saddle the American people with the extremely high costs of safeguarding these LNG tankers as they go into heavily populated areas, why not consider instead, saving us all some money by seeing to it that offshore or remote onshore locations become the preferred alternative. At that point maybe some would even be willing to discuss taking the savings from sending these tankers into less densely populated areas and reapplying those monies to encourage and reward companies that agree to develop offshore terminals or remote onshore terminals. Finally, we should also realize that when it comes to siting LNG import terminals that we aren't talking about Economics 101. What I mean by this is many are saying that more terminals equals more supply and therefore much lower costs for the consumer. I don't necessarily believe that this should be stated as a matter of fact. (Please see the attached article, which discusses this issue in more detail.)*

Thank you for the opportunity to present these ideas before your committee. Should you have any questions or should you wish to contact me, please feel free to call me at 508-324-2600.

Sincerely,

EDWARD M. LAMBERT, JR.,
Mayor.



*The attachments have been retained in the subcommittee files.